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THE
DUBLIN JOURNAL
OF
MEDICAL SCIENCE.

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THE DUBLIN JOURNAL

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MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

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ART. I.—*Operations for Strangulated Hernia.*[a] By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

MY chief reason for discussing this subject in a formal lecture is that I may convince those amongst you, who may elect to practice in the country, of the simplicity and safety of these procedures when carried out *early* and with strict aseptic precautions. I do not mean that for ensuring the latter condition elaborate appliances, expensive and perishable dressings, and a profound knowledge of bacteriology are necessary. No, in the poorest cabin you can, with a little care, conduct cases with the same confidence as in this theatre; nor need there be much delay occasioned by the preparation. What, then, are the details to be attended to before setting about a herniotomy? We may divide them into—

1. The preparation of the patient.
2. The selection and sterilisation of instruments.
3. Preparation and sterilisation of ligatures and dressings.
4. Sterilisation of the operator's and assistant's hands.

PREPARATION OF THE PATIENT.

The parts should be *shaved*, then scrubbed with *soap and water*, subsequently with *ether*. Then a swab moistened in

---

[a] A Clinical Lecture. Delivered at St. Vincent's Hospital.

1–500 *corrosive sublimate solution* should be applied, and retained in place until the beginning of the operation.

SELECTION AND STERILISATION OF INSTRUMENTS.

Few instruments indeed are necessary, and when possible metal-handled ones should be selected. A good scalpel, dissecting forceps, half a dozen clip forceps, a flat director—one large and one small—full curved needle, and a pair of retractors suffice, and unless there is marked bleeding the clip forceps are not required, as heat checks oozing and the contusion produced by the clips is avoided. Instruments are rendered thoroughly *aseptic* by boiling in soda solution—23 ounces sodii carb. exsiccat. to 5 pints of water—for a quarter of an hour. They may then be used direct from this fluid, or be immersed in 1-40 carbolic solution.

PREPARATION OF LIGATURES, ETC.

(*a.*) *Ligatures* of Chinese twisted silk, stout and fine, and silkworm-gut for sutures.

(*b.*) *Swabs* of gauze, muslin, or wool.

(*c.*) *Towels* and necessary (*d.*) *Dressings* of wool or gauze—in the absence of double cyanide of zinc and mercury—should be boiled for half an hour in a solution prepared by adding 6 drachms of common salt and 2 drachms of dried carbonate of sodium to 5 pints of water. According to Tavel, who has thoroughly investigated the subject, this fluid is absolutely unirritating to the tissues, and containing the same proportion of salt and alkali as the blood it serves admirably for flushing cavities such as the abdomen, and irrigating wounds generally. Gauze or wool wrung out of this solution make safe and comfortable dressings.

STERILISATION OF HANDS.

The hands should be first well scrubbed with soap and warm water and nail-brush for several minutes, then they should be dipped in and well rubbed with corrosive sublimate solution (1–500, made by dropping two of Burroughs & Wellcome's tablets into a pint of warm water). The immersion should last four or five minutes.

Now we are ready to undertake operations of the greatest gravity and magnitude, feeling that, with due care during the procedure, no infection of the wound is likely to occur. Remember that a primary disinfection is rendered absolutely useless if, during the operation, we place our hands on bedclothes or other unprotected material, and so we must surround the field of operation with the sterilised towels above referred to, and no instrument should be allowed to rest anywhere but in the tray or on one of these towels. As a rule it is safer to replace instruments in the carbolic bath when not in use.

OPERATION—INGUINAL HERNIOTOMY.

Make an oblique incision a finger's breadth above Poupart's ligament, going through skin and superficial fasciæ and fatty tissue until you reach the strong glistening fibres of the external ring, ligature superficial epigastric artery and pubic vein. Now cut the fascia, passing down from the external abdominal ring (Cooper's), and carefully split the cremasteric fascia to come down on the only remaining covering of the sac—the internal spout-like fascia, which should be pinched up with a sharp-toothed clip forceps on each side of the neck of the sac. Elevation of these forceps enables one to divide this layer well up along the neck of the sac, which guides the finger or a director to the internal ring, where the cause of strangulation usually exists. Using the finger as a guide, or a flat director, a blunt-pointed hernia knife is made to notch the ring upwards in direction. The contents of the sac may now be readily reduced; should any difficulty be experienced the sac should be laid open by pinching it up with two clip forceps and cutting between them, thus avoiding injury to the omentum or intestine. Reduction is easy now, unless there be some of the complications of which we shall speak later. Pass a ligature round the neck of the sac and cut below it. Deep and superficial suturing complete the operation. In deep suturing protect the cord with the finger. I have seen the pampiniform plexus included in the suture, and necrosis of the testicle was averted only by the timely removal of all the deep sutures.

RADICAL CURE.

It is advisable in all cases (unless age, debility, or local infection contra-indicates it), to carry out one or other of the methods of radical cure, the simplest of which consists in transfixing the neck of the sac high up, and securing by Bantock's ligature; the sac may then be rapidly removed, or—if very adherent—section of the neck will suffice. Then guarding the cord with the index finger a few stout silk sutures are passed, bringing the walls of the canal together. Deep and superficial suture of the wound, entirely obliterating any cavity, completes the operation.

The method of operation which I now carry out is shown in the accompanying figures. It consists in drawing the sac upwards and outwards through the external oblique, and fixing it near the anterior superior spine, after Kocher's method; then with interrupted sutures bringing the conjoined tendon down to the inner edge of Poupart's ligament, so as to close the inguinal canal, except at its lower part. Now the outer flap of the external oblique is drawn upwards under the inner flap and fixed by suture as in Fig. 2. The inner flap is now brought downwards and outwards and fixed to the deep fascia of the thigh below Poupart's ligament. A few silkworm-gut sutures in the skin complete the procedure.

(To be continued.)

ART. II.—*A Case of Slow Cardiac Action.* By R. J. KINKEAD, M.D., Galway.

ON the morning of March 16th, 1898, I was called to see Mr. C.

I found him in bed. He gave the following history:—Had always enjoyed good health; had a capital appetite; digestion satisfactory; "could eat anything"; bowels regular; slept well. He had been perfectly well until evening of the 15th, when just at supper time he "felt faint"; it passed off rapidly, and he eat his supper, although while doing so the faint feeling recurred. After supper he went out, "thinking the air would do him good." While out he had a sharper attack of faintness than the preceding ones. He came in and went to bed, but did not sleep, the attacks of faintness recurring at short intervals during the night.

MR. M'ARDLE ON OPERATIONS FOR STRANGULATED HERNIA.

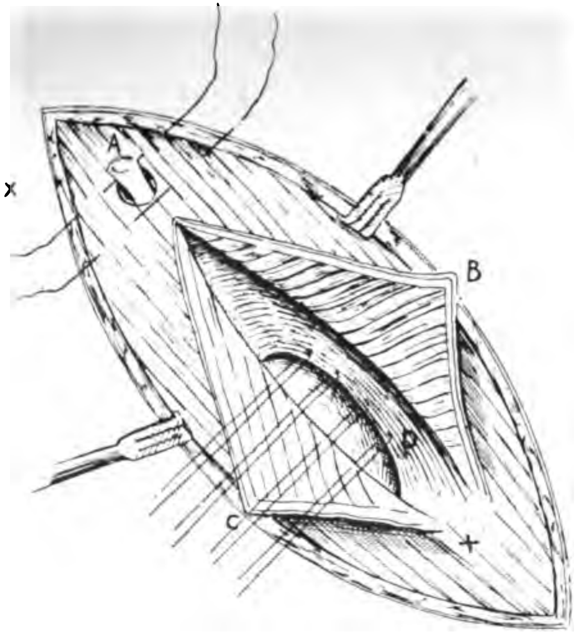

Fig. 1.

A. Sac drawn through external oblique.
B. Inner pillar of ring.
C. Outer pillar of ring.
D. Conjoined tendon.

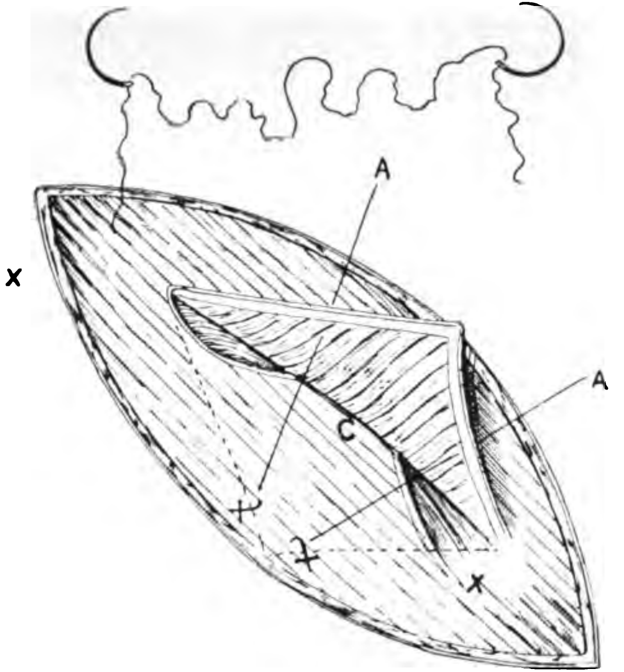

Fig. 2.

A A. Suture passed with needles, as in figure, drawing outer pillar under inner pillar.

He did not look ill; his temperature 98°; pulse regular, soft, and irritable; tongue slightly coated; respiration normal; abdomen soft; slight tenderness over area of stomach; no vomiting, but nausea on pressure; heart sounds rather short and irritable; valves healthy; respiratory sounds normal. On lying down after I had examined the back of his chest he exclaimed, "that faintness is coming on again." On placing my finger on pulse I found it intermitting—three beats and then a stop for ten seconds. The stethoscope showed correspondence between heart and pulse—three beats, then absolute silence for ten seconds.

I saw him again in the evening. During the day the attacks of faintness had become more frequent, and for some hours the faint feeling had been continuous. He had not lost consciousness at any time, and his mind had been, and was, perfectly clear; he had vomited two or three times, and there was now acute pain on pressure just below the ensiform cartilage.

The pulse had fallen to 6 in the minute. There was one beat of the heart—first and second sound distinct and a hæmic murmur with the first—then neither impulse nor sound for ten seconds; then another beat and ten seconds interval, and so on. He complained of a "rushing, surging feeling" in his head immediately after each contraction.

I watched him for fully an hour, phonendoscope over cardiac area, finger on pulse, and timing interval by my watch, and during that hour the heart beat exactly six times in each minute.

Professor Pye kindly gave me the benefit of his advice in consultation. We injected atropin hypodermically, and applied a mustard leaf to pit of stomach.

About an hour after faint feeling passed off; the pain at pit of stomach got better, and he passed a comfortable night.

Next morning I found pulse beating 72 to the minute, and heart's action regular and normal; stomach tenderness gone. He progressed favourably until the 25th, when the pulse began to intermit, missing one beat in every ten or twelve; and during the night of 25th both knees became intensely painful and swelled.

I put him on salicylate of sodium. The pain subsided; the swelling went down; pulse became regular, and on 27th he was apparently well. He got up in a day or two, and since then he has had no recurrence of pain, faintness, or indigestion.

Exactly how long the heart beat at the phenomenal rate of 6 to the minute it is impossible to say—probably for six or seven hours from the time the faint feeling became continuous; and there was the "surging and rushing in the head." Prior to that it had, with short intervals, been contracting at the rate of 14 or 15 to the minute.

The entire period covered by the irregular action from the first feeling of faintness was fully twenty-eight hours.

ART. III.—*Nantwich Brine Baths in the County Palatine of Chester.* By SIR PHILIP C. SMYLY, M.D., F.R.C.S.I.; Surgeon-in-Ordinary to H.M. the Queen in Ireland.

"EUREKA!" remarked an ancient Greek philosopher as he hurried home after his bath, being in such a hurry to make a note of his discovery that he did not wait, so the story goes, to put on his clothes. He found what he wanted; I also have found what I wanted, and hasten to make a note of it.

What I wanted, and what, no doubt, some of my professional brethren also want for themselves or for their patients—a health-resort and invigorating baths within easy reach of home, with pleasant and interesting surroundings.

Nantwich is just such a place, little known either to the profession or to the general public.

So little known is Nantwich that its name does not appear in the 1894 edition of that most valuable book, "Bradshaw's Dictionary of Bathing Places, Mineral Waters and Health Resorts." Some of the brine baths are mentioned, but Nantwich has been omitted.

To show how little Nantwich is known, I may mention that a gentleman met a friend between Chester and Crewe, who asked him where he was going. "To visit my son at

Nantwich, where he is taking a course of baths." "Where is that—one of those Welsh places, I suppose?" "Can it be possible that you, connected as you are with the L. & N. W. Railway, do not know where Nantwich is? On one of your own lines, only a few minutes from Crewe Station, and a most valuable brine bath."

Some of my medical brethren may be glad to hear of the brine baths of Nantwich, how they are taken, and what they are for. "Nantwich is the name of an ancient market town in the middle of Cheshire. Old writers locate it on the great and direct road from London to Holyhead; one hundred and sixty miles from London and twenty miles from Chester. Since the introduction of iron roads the situation of Nantwich must be referred to the modern and rival town of Crewe, from which railway centre it is about four miles on the Crewe and Shrewsbury branch of the London and North-Western Railway. It is only within the last thirty years that the existing modern fronts have put a new face on the ancient gables of Nantwich. Old barns, peasant cottages in the neighbourhood, a few ragged and unsightly buildings, still linger to tell of forgotten years—

> 'Whose walls with wrinkles frown,
> And people say, who pass that way,
> 'Twere well that house were down.'

"In the outskirts of the town long rows of regularly-built houses, with garden plots attached, have become the homes of an increasing population."[a]

The town of Nantwich now is bright and clean and healthy. Zymotic diseases are not frequent, and tubercular diseases are rare. No death from typhoid fever has been recorded for several years.

Gough's edition of "Camden's Britannia," Vol. III., p. 43, says:—"The River Wever runs by Nantwich not far from Middlewich to Northwich. There are famous saltwiches or pits, where the brine or saltwater is drawn out of pits and not poured upon burning wood, as the ancient Gauls and Germans used to do, but boiled over the fire to extract the salt. I have no doubt but the Romans were acquainted with these pits, and that they laid a salt duty thereon. Nantwich is accounted the largest and best built town in the county. It has one brine pit about fourteen feet from the river, out of which the brine is conveyed in wooden troughs into the houses, where are several casks fixed in the ground, which they fill with the saltwater; and on ringing of a bell the fire is lighted under leaden kettles, of which there are six in each house, and the water boiled, and women called 'wallers' with little wooden rakes draw up the salt from the bottom, and put it into baskets, out of which the water drains and the salt settles." This account, written in 1806, describes the pit from which all the brine used for baths is obtained.

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[a] A History of the Town of Nantwich. By James Hall, Esq.

The trade of making salt has been abandoned for many years. "After having been closed for about a quarter of a century the ancient brine pit was purchased by William Cooper, Esq., of White Hall, Welsh-row, who in 1882 had it cleaned out at considerable expense for the purpose of supplying the newly-erected medicinal baths with brine. It is now pumped into large tanks, in which the water for the baths is heated by steam. The same engine pumps the saline water for the town baths and also for the baths at the Brine Baths Hotel. Both establishments now belong to the same company. The town baths are in a curious building, which is also called the town hall. In it are reclining baths and a large tepid swimming bath lined with white tiles, about seven feet deep at one end. The other establishment is about ten to fifteen minutes' walk outside the town, and the brine is pumped into large tanks in the bath-house.

There are a variety of baths at both the town baths and at the Brine Baths Hotel:—1. Reclining. 2. Deep immersion. 3. Needle bath. 4. Shower bath. 5. Wave bath. 6. Vapour bath. 7. Ascending and descending douches. 8. Hot air. 9. Roman baths. The brine used is pumped from the brine-pit in the town. The supply is inexhaustible. Dr. Munro said that some time ago the very powerful pump was kept working night and day for a fortnight without lowering the level of the water in the pit more than a few inches.

The Brine Baths Hotel, formerly called Shrewbridge Hall, was built in 1829 by Michael Bott. It is a very good and substantial house—a first-class country house—built when people knew how to build, with large stones and thick walls. It is situated on somewhat rising ground, so that the view over a rather flat country is extensive, and there is always fresh air. The grounds round the house—six acres of pleasure ground in a park of seventy—are very well planted with beautiful and rare trees, and the garden pleasure grounds, with plenty of flowers and well-kept paths, are delightful for strolling about. There are also two well-kept lawn tennis courts and a good croquet ground.

A large addition has been built which contains a number of suites of rooms, and a well-appointed dining-room—in fact, it is now like one of the best-class foreign establishments. "The interior of the hotel is specially adapted for invalids, with suites of rooms on the ground floor. The large and well-furnished public rooms give the visitor quite a homelike feeling." For wet or cold days there is a winter garden, with palms and plenty of chairs, a billiard room, smoking room, &c., and a fine long and broad corridor for walking up and down.

Everything is managed by Mr. S. C. Worsey, who knows his business and does it well.

There is table d'hôte at separate tables in the large dining-room; breakfast, luncheon, 5 o'clock tea and dinner. The food is good, clean, well cooked, and nicely carved and served. As Mr. Worsey says—"The tariff is low and the living plain and wholesome—a style best adapted to those in ill health."

The Visiting and Consulting Physicians are Dr. Seymour H. Munro and Dr. J. D. Munro. They are of opinion that the most remarkable cures or successful results of the treatment are in sciatica, gout and rheumatism, neuralgia, strains and sprains, and in all the sequences and consequences of gout and rheumatism. Many people suffer from gout and yet do not like the name applied—"Well," said a witty doctor, "if you don't like that name you may call them ancestral pains."

Some internal congestions are much benefited by these baths, combined with massage.

There are skilled attendants, who carry out the medical man's directions with care and gentleness. Dr. Ernest Sandow's carbonic acid or carbonated baths are also used.

The following list of cases are from Dr. Munro, just as examples out of many:—

1.	Mr. G.	General Rheumatism	12 Baths	Cured.
2.	Mr. F.	Severe Sciatica	17 Baths and Massage	Quite well.
3.	Mr. J.	Lumbago	2 Baths	Relieved.
4.	Mr. R.	Do.	21 Do.	Quite well.
5.	Mr. C.	Rheumatism	18 Do.	Nearly well.
6.	Dr. K.	Rheumatism of Foot	18 Do.	Quite well.
7.	Major H.	Sciatica	12 Baths and Massage	Do.
8.	Mr. N.	Do.	28 Do	Do.

AMUSEMENTS.

Amusement is not absolutely necessary to the good effects of the mineral water cure; it is, however, a very important help.

At Shrewbridge Hall, for those who are content to take life quietly, there are six acres of pleasure grounds and gardens to walk about, or to sit under the shade of large and beautiful trees; and these gardens are in a park of seventy acres. For others there are many most interesting drives—Combermere Abbey, "beautifully situated beside a lake in the middle of a beautiful park, showing with what taste and skill the monks of old selected the sites for their abbeys" (permission from the agent to visit the abbey can be obtained); Peckforton Castle, the ruins of Beeston Castle, Cholmondeley Castle, Crewe Hall, Doddington Hall, and several other charming places.

For cyclists the roads are perfect—"smooth, level, and kept in the highest state of repair, and very little dust on hot days and no mud on wet days. The soil everywhere dries with rapidity."

For those who like hunting, and yet need a course of baths, there is every accommodation. Five celebrated packs of hounds meet within driving distance of the Brine Baths Hotel—the North Cheshire, South Cheshire, North Stafford, North Shropshire, and Sir Watkyn Wynne's.

There are large stables where ladies and gentlemen can keep their own horses.

I shall conclude these notes with a few words from the Report of the Medical Officer of Health of the district of Mid-Cheshire:—"It is notorious that the new red sandstone upon which so much of the County of Chester is placed is the parent of the purest water, and in its various intersecting strata of the most medicinal spas. . . . . As to the general healthiness of the district, one pregnant fact will have more weight than a lengthened statement, and that is, that in the urban district of Nantwich during the whole of last year there was not one fatal case of that commonest of all fevers—namely, typhoid fever. Such are the arrangements and natural advantages of Nantwich that typhoid fever is here simply an unknown disease. In this respect it presents a marked contrast to health resorts generally, which, from severe strain upon inadequate sanitary provisions, are often very hot-beds of all the varieties of zymotic diseases. . . . The intelligence of a later age will bring to the surface, hitherto too long neglected, the subterranean possessions of Nantwich for the well-directed benefit of suffering humanity."

ART. IV.—*Clinical Report of the Rotunda Lying-in Hospital, for One Year, November* 1, 1896, *to October* 31, 1897. By R. DANCER PUREFOY, M.D., Master; T. HENRY WILSON, HENRY JELLETT, R. P. R. LYLE, Assistant Masters.

(*Continued from Vol. CV., page 479.*)

GYNÆCOLOGICAL DEPARTMENT.

THE gynæcological department originated in 1835 in a very small way. A few beds in one ward of the old Auxiliary Hospital were set apart "for the humane and beneficial purpose of alleviating the sufferings of patients labouring under diseases peculiar to women."

Since that year the work of this department has steadily increased. In 1877 the whole of the old Auxiliary Hospital was set apart for gynæcology, was thoroughly remodelled, and, so far as possible, brought up to the requirements of the surgery of the day. It was soon found that the nature of this building rendered thoroughly aseptic surgery almost impossible. Additional accommodation for the nursing staff was urgently required, and the hospital would have proved most dangerous in case of fire. Therefore, in 1893 the present fine building was commenced, and carried out on the most approved modern scientific principles. The good results of the numerous difficult operations which have been since performed in it are the best proof of the wisdom of erecting it, and of its great value to the suffering poor.

This building, which is called the Thomas Plunket Cairnes Wing of the Rotunda Lying-in Hospital, in commemoration of the great generosity of Mr. Cairnes to the Institution, is set apart principally for gynæcology, and was opened for the reception of patients on November 27th, 1895. It consists of three stories, each of which is connected with the corresponding level of the Lying-in Hospital by corridors. The ground floor contains the out-patient and dispensing departments, the nurses' sitting-rooms; bedrooms and lavatories for portion of the female staff, and two small wards for special cases. The first floor consists of gynæcological wards, theatres, and patients' lavatories. The appended Plan will explain its arrangement. The second or top floor is entirely set apart for the nurses' bedrooms. (Plate III.)

The gynæcological wards are five in number—two large wards containing sixteen beds each, and three smaller wards containing respectively one, one, and two beds, making a total of thirty-six beds.

There are two sets of lavatories on each floor, their position being shown in the plan. They each contain two w.cs., one bathroom, one room for storage of the patients' clothes, and one room containing three separate sinks—one for the washing of mackintosh bed-sheets and two for soiled vessels.

There are two theatres—one (A) for ventral cœliotomies, and the other (B) for all examinations, vaginal operations, and septic cases. Theatre B calls for no special remarks;

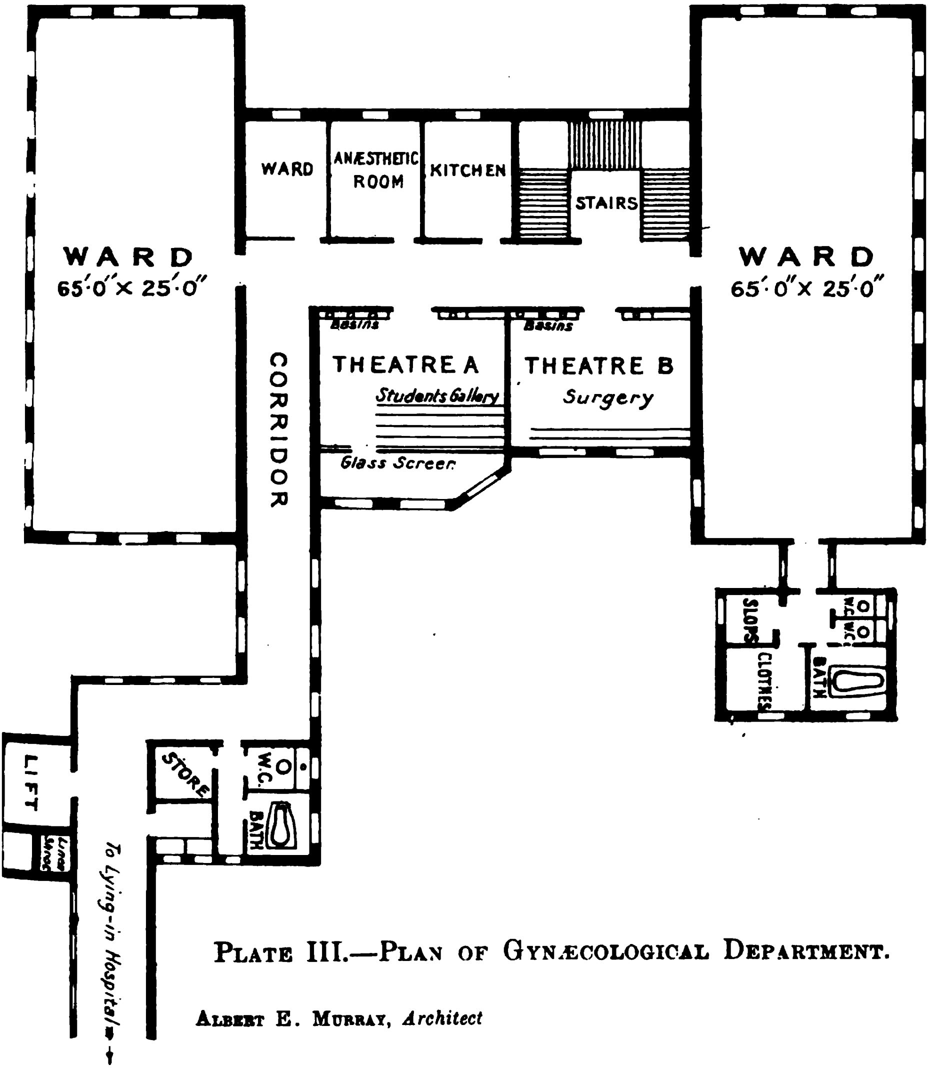

PLATE III.—PLAN OF GYNÆCOLOGICAL DEPARTMENT.

ALBERT E. MURRAY, *Architect*

Theatre A contains some features which are of interest. It is divided into two unequal parts by a large glass plate; the larger of these contains the wash-basins, sinks, sterilisers, and students' gallery; the smaller is the operating theatre proper, and is connected with the outer and larger part by a glass door. The entire operating part is washed out by means of a hose. It looks towards the north, and has a glass roof, which ensures a good head light. The wash-basins of both theatres are furnished with foot-taps.

The out-patient department consists of three rooms—a waiting room, a consulting room, and an examination room. The latter contains an examination chair and couch, and all the necessary appliances for performing such operations as do not require the admission of the patient to the hospital.

So much for the history and description of the building; we shall now describe briefly the general operative technique:—

Sterilisation.—All towels, operator's coats, dressings, &c., which are intended for use during an operation, are sterilised in a Lautenschlager's steam steriliser. Marine sponges are *not* used, their place being taken by gauze "sponges" formed of eight layers of ordinary butter muslin. These are sterilised in a separate steriliser, from which they are removed, one by one, as they are required during an operation.

All instruments are boiled for twenty minutes in a solution of washing-soda and water. The ligatures used are silk, silkworm-gut, and catgut. The silk is prepared by boiling for thirty minutes, and is stored in 1 in 20 carbolic lotion. Silkworm-gut is prepared by boiling for twenty minutes, and then stored in 1 in 500 corrosive sublimate. The catgut is prepared by a method first introduced at the Rotunda, and which has proved most successful. The gut—chromicised or not, as preferred—is loosely rolled on glass plates and placed in absolute alcohol for at least two days, fresh alcohol is then substituted for a couple more days to insure absolute dehydration; the plates are then placed in a stout brass box with a screw top (*vide* illustration), which is half filled with alcohol. This box, tightly screwed up, is immersed in a saucepan of cold water, which is gradually raised to boiling-point, and kept boiling for thirty minutes. The box is then removed, and as soon as it is cooled the gut is taken out and stored in a mixture of glycerin 10 parts, and alcohol 90 parts. The chromicised gut is perhaps preferable for vaginal work, non-chromicised for abdominal.

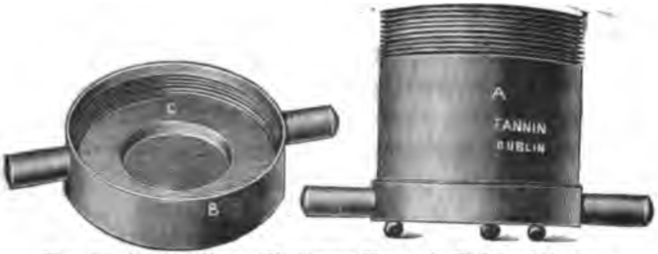

Fig. 1.—A, Steriliser; B, Screw Top; C, Rubber Washer.

The hands of the operator and his assistants are first cleansed by washing thoroughly with soap, hot water, and a nail-brush for about ten minutes, and are then immersed in corrosive sublimate solution, 1 in 500, for a couple of minutes. All nail-brushes are boiled each morning, and kept lying during the day in strong creolin solution.

Antiseptic solutions.—The antiseptic solutions used are—corrosive sublimate lotion, 1 in 500, for the hands; carbolic lotion, 1 in 20, for storing silk; creolin lotion, 1 in 320, for vaginal and uterine douching; boric lotion, nearly saturated solution for washing out the peritoneal cavity in septic cases; formalin solution, 1 to 3 per cent., occasionally for various purposes.

Preparation of the Patient.—For minor operations on the vagina, the external parts are shaved and thoroughly scrubbed with soap and water; the vagina is douched out with creolin lotion, and well washed out with the fingers and soap. For vaginal cœliotomies the vagina is douched and plugged twice with iodoform gauze the day before the operation; on the day of operation the plugging is removed, and the vagina thoroughly douched, previous to the administration of the anæsthetic.

For ventral cœliotomies, the skin of the abdomen is washed with soap and water and ether the night before operation, and a compress soaked in corrosive and glycerin, 1 in 100, applied. This is removed when the patient is on the operating table; the skin is again washed with ether, and finally with corrosive sublimate solution, 1 in 500.

For abdominal hysterectomies the two last methods are combined.

The patient is given a purgative thirty-six hours before, and an enema the morning of, operation. She is brought into the operating theatre—which is kept at a temperature of 70° to 75° F.—dressed in a sterilised dressing-gown and long woollen sterilised stockings. No blankets are allowed, as the room is sufficiently heated.

The peritoneal cavity is never drained unless septic matter has escaped into it, or unless there is a large area either denuded of peritoneum or from which there is general oozing. The usual form of drain used in those cases in which it is desired to keep the intestines out of the pelvis is a Mikulicz bag—a gauze bag plugged with strips of the same material. This is removed on the second or third day.

A rubber or glass drainage tube is practically never used except in cases of general septic peritonitis.

Flushing out the peritoneal cavity is performed only in cases of general septic peritonitis, or in cases in which the patient is greatly collapsed. In the former case boracic solution is used, in the latter "normal saline solution." If septic matter escapes from a ruptured tube, it is preferred to wipe it out rather than douche out the cavity, as the chances of disseminating it are minimised.

In most instances the abdominal wound is sutured with silkworm-gut alone, passing each stitch through from skin to peritoneum. In cases of lengthy incision, or where the abdominal wall is very thin or very fat, the divided peritoneum is brought together with a continuous catgut suture.

The wound is dressed in the first instance with ordinary gauze sponges—covered, in turn, with cellulose, absorbent cotton-wool, strapping, and an abdominal binder. At all subsequent dressings double-cyanide and sal-alembroth gauzes are used. If the temperature remains below 100° F. the dressings are not touched for eight days, and then the sutures are removed.

Post-operative Treatment.—After all ventral cœliotomies the patient is placed in a separate ward for the ensuing three or four days, under the care of a special nurse. As a rule nothing is given by the mouth for from 15 to 20 hours; if necessary, nutrient and stimulating enemata are administered every three or four hours. Opiates are strictly avoided, save in very exceptional cases. A purgative is administered on the second morning after operation, and usually consists of calomel, given in small repeated doses, and followed after a few hours by an effervescing saline, and an enema still later if required. Usually the patient is moved into the general ward three days after operation.

After ventral cœliotomies the patient is allowed, as a rule, to sit up on the eighteenth to the twenty-first day, according to the nature of the operation and course of convalescence, and a Lawson Tait's abdominal belt is worn for a year after operation.

Anæsthetics.—The anæsthetics used in the practice of the hospital have been chloroform and ether. Chloroform is invariably used in obstetric work, as it does not give any of the trouble which is so often associated with the administration of ether. In the gynæcological practice of the hospital chloroform is the rule, but occasionally ether is used, especially in those cases where during the administration of chloroform the heart shows any signs of weakness, or where the respirations become shallow and insufficient. For this purpose Clover's inhaler is used without the bag, and it acts as a valuable stimulant both to the respiratory and circulatory apparatus. Chloroform is administered on a Skinner's mask.

There were 36 patients in hospital on Nov. 1st, 1896; 528 were admitted during the twelve months; 9 died and 31 remained under treatment on 31st October, 1897. Of these patients 468 came under treatment for gynæcological complaints; 60 were discharged, not requiring treatment; 10 were transferred to the Maternity Hospital; 17 were suffering from complaints not of a gynæcological nature.

TABLE I.—DISEASES.

DISEASES	Total Cases	Cured	Improved	Not Improved	Died	REMARKS
VULVA—						
Bartholinian cyst	4	3	–	1	–	
Laceration of labium minus	1	1	–	–	–	Sutured
Hæmatoma	1	1	–	–	–	Absorbed without special treatment
Epithelioma of clitoris	1	1	–	–	–	
PERINÆUM—						
Simple lacerations	43	43	–	–	–	
Complete lacerations	4	3	1	–	–	
RECTUM—						
Carcinoma	3	–	–	3	–	
Hæmorrhoids	4	4	–	–	–	
Recto-vaginal fistula	1	–	1	–	–	Plastic operation; patient 65 years of age; result not very good
Prolapse	1	–	1	–	–	Replaced
Ischio-rectal abscess	1	1	–	–	–	Incised, curetted and plugged with iodoform gauze
URETHRA AND BLADDER—						
Caruncle	6	6	–	–	–	5 excised; 1 cauterised with nitric acid
Vesico-vaginal fistula	1	–	–	1	–	Advanced carcinoma of uterus
Cystitis	5	2	3	–	–	Irrigation with boric lotion
VAGINA—						
Cystocele only	3	3	–	–	–	
Rectocele only	9	8	1	–	–	
Cystocele and rectocele	9	9	–	–	–	
Vaginitis	11	11	–	–	–	
„ senile	3	–	2	1	–	
Cyst of vaginal wall	2	2	–	–	–	
CERVIX—						
Lacerations	32	32	–	–	–	
Hypertrophy	7	7	–	–	–	

TABLE I.—DISEASES—*con.*

DISEASES	Total Cases	Cured	Improved	Not Improved	Died	REMARKS
CERVIX—*con.*						
Erosions . .	4	4	–	–	–	
Carcinoma . .	11	1	2	7	1	
Nabothian cyst .	1	1	–	–	–	Cyst opened and scraped out
Polypus. . .	6	6	–	–	–	
CORPUS UTERI—						
Endometritis and metritis	96	–	95	–	1	Acute sepsis
Sub-involution . .	14	14	–	–	–	
Pathological anteflexion	39	–	39	–	–	
Threatened abortion .	8	8	–	–	–	
Incomplete abortion .	33	33	–	–	–	
Prolapse . .	7	6	1	–	-	
Procidentia . .	2	2	–	–	–	
Retroversion and Retroflexion	80	–	80	–	–	
Carcinoma . .	1	–	–	1	-	Inoperable
Fibro-Myomata -	23	9	4	6	4	
Hyper-involution .	1	–	–	1	–	
Pregnancy . .	15	–	–	–	–	
Bicornuate uterus .	1	–	–	–	–	
FALLOPIAN TUBES—						
Sacto-salpinx . .	2	–	–	2	–	Refused operation
Salpingitis . .	5	2	1	2	–	
Tubal pregnancy .	4	4	–	–	–	
Pyosalpinx . .	8	5	–	3	–	Three refused operation and were discharged
Hæmatosalpinx .	5	5	–	–	–	
Adenoma . . .	2	2	–	–	–	
Tubercular . .	2	2	–	–	–	
Hydrosalpinx . .	1	1	–	–	–	

TABLE I.—DISEASES—*con.*

DISEASES	Total Cases	Cured	Improved	Not Improved	Died	REMARKS
OVARIES—						
Cyst . . .	25	19	–	5	1	Four refused treatment; one was an exploratory cœliotomy described later on
Dermoid . .	2	2	–	–	–	
Cirrhosis . .	1	1	–	–	–	
Parovarian cyst .	1	1	–	–	–	
Prolapse . .	7	–	–	7	–	
PELVIC PERITONEUM AND CELLULAR TISSUE—						
Cellulitis and Parametritis	3	–	3	–	–	
Hæmatocele . .	9	–	4	5	–	
Peritonitis . .	2	–	1	–	1	
Abscess . . .	1	–	–	1	–	Pelvic abscess opening into rectum
ABDOMEN—						
Carcinoma . .	3	–	1	2	-	General
Ventral Hernia .	4	3	–	1	–	One refused operation.
Umbilical epiplocele .	1	1	–	–	–	
Abscess . . .	3	1	1	–	1	
Splenic leucocythæmia	1	–	1	–	–	
MISCELLANEOUS—						
Coccygodynia .	1	–	1	–	–	
Calculus in ureter (?) .	1	–	1	–	–	
Mammary scirrhus .	1	–	1	–	–	Excised
Incontinence of urine .	3	1	2	–	–	
Bubo . . .	1	1	–	–	–	
Mammary abscess .	1	1	–	–	–	
Phlebitis . .	1	1	–	–	-	

VULVA.

Bartholinian Abscess.—Of this there were several cases, all of which were opened, curetted, and plugged with iodoform gauze in the dispensary, the patients not being detained in hospital.

Bartholinian Cysts.—In three cases the cyst was of a simple nature; it was opened, the cyst wall dissected out, and the cavity stitched up with continuous catgut suture. The fourth patient refused treatment.

Epithelioma of the Clitoris.—This patient was about three months pregnant; the tumour was the size of a hazelnut, with an ulcerating surface; it was dissected out from the vestibule, and proved on microscopic examination to be epitheliomatous. Patient was delivered at full term in the maternity wards on Sept. 24th, 1897, of a living child, and there was no appearance of a recurrence.

PERINÆUM.

Simple Laceration.—Of the 43 cases of simple uncomplicated laceration of the perinæum that is not associated with rectocele, 37 were treated by Lawson Tait's operation; these, with one exception, were stitched with silkworm-gut, which was removed on the eighth day; in the remaining case catgut was used; it was absorbed and union was perfect. Six cases were operated on by Sänger's method. In every case there was a preliminary curetting of the uterus. The patients were allowed up on the twelfth day.

Complete Laceration.—In every case Lawson Tait's method was adopted; in two of these there was incontinence of fæces, one of which had, in addition, ulceration of the posterior rectal wall, the laceration extending one and a half inches up the recto-vaginal septum. This patient underwent a preliminary treatment until the ulcers were healed. Following Lawson Tait's recommendation, and contrary to the usual procedure of the hospital—that is, not giving an aperient until the evening of third day—the bowels were opened on the succeeding day by an enema; some of the stitches unfortunately gave way, and although the patient left hospital with control over her rectum and in every way relieved, she had not a perfect perinæum.

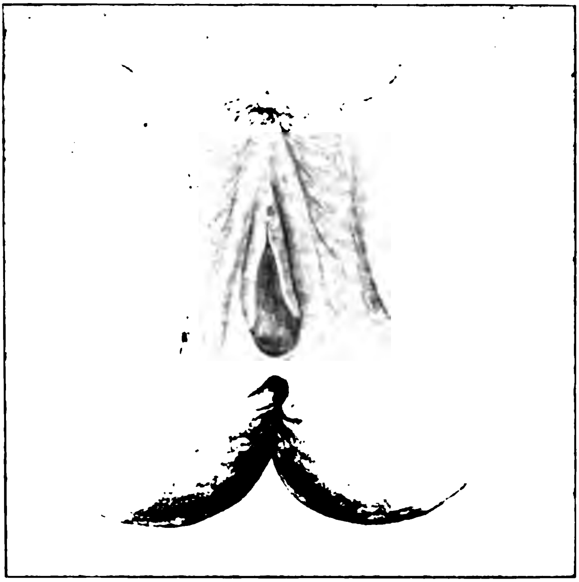

Plate IV.—This patient (who came from the country) had a complete Laceration of the Perinæum, consequent on a forceps delivery on her first confinement eighteen months previously. She had been stitched, but the skin alone had united, leaving a large recto-vaginal fistula behind it.

These cases are allowed to sit up on the twelfth day and leave their bed two days later. (Plate IV.)

RECTUM.

Carcinoma.—Two cases were inoperable and were discharged, the third was sent to a general hospital.

Hæmorrhoids.—Four patients sought admission for complaints of a gynæcological nature, and, in addition to other treatment, the hæmorrhoids were excised.

VAGINA.

Vaginitis.—Of these cases eleven occurred in young women and were treated by several applications of various astringents, especially pyroligneous acid; one was caused by an incarcerated hollow vulcanite ring pessary, which had to be broken up with bone forceps before it could be removed. There were three cases of senile vaginitis, which were treated in a similar manner, and a considerable number of patients were found suffering from vaginitis in association with other gynæcological complaints, which we have not thought necessary to tabulate.

Cyst of Vaginal Wall.—One of these was a simple cyst, which was dissected out; the other was loculated and contained pus. It was freely opened, curetted, and plugged with iodoform gauze.

Cystocele.—There were three cases of cystocele, unaccompanied by any marked degree of prolapse of the posterior vaginal wall; in all of these the usual operation—that of removing an oval flap from the anterior vaginal wall—was performed, the exposed surface being stitched up with a continuous catgut suture, which was left to be absorbed. In two of these perinæorrhaphies were performed, which are recorded under that heading. There was a rise of temperature to 103° F. on the evening of the second day in one of these cases, without any corresponding rise of pulse; the temperature, however, fell to normal next day and continued so. (Plate V.)

Rectocele.—When this condition occurred, it was found in every case to be due to an old perineal laceration. It was repaired by the methods recommended by Hegar or Martin, the former being preferred. The perineal stitches, which were of silkworm-gut, were removed on the eighth day. The results were extremely satisfactory except in one case.

Cystocele and rectocele, when found combined, were treated as described under the two headings. In all plastic operations on the vagina there is a preliminary curetting of the uterus. After vaginal operations iodoform gauze is placed loosely in the vagina and removed the same evening. Patients are allowed to sit up on the sixteenth to the eighteenth day, and to get up on the twenty-first. Cystocele and rectocele associated with prolapse or procidentia are included under the latter headings.

CERVIX.

Lacerations.—Those requiring operation were mostly bilateral, and often associated with hypertrophy and [or] erosion, occasionally of the follicular variety. In cases complicated with erosion or hypertrophy, Schröder's amputation was performed. This was done eighteen times.

In cases of deep laceration, where there was no hypertrophy of the cervix, Emmet's trachelorrhaphy was the one preferred. This operation was performed eight times.

Sänger's trachelorrhaphy was performed five times.

In one case the last operation was done on the left side of the cervix and an Emmet on the right.

In two others the laceration with erosion was so slight that it was sufficient in one case to puncture the follicles, and in the other to touch the surface with nitric acid.

In another case in which Sänger's trachelorrhaphy had been performed unsuccessfully some months previously the laceration was very deep, and the erosion extended right up into the left lateral fornix, the chief features being menorrhagia and profuse leucorrhœa. It was treated for three weeks with applications of carbolic acid without marked improvement. An Emmet's operation was performed; but seven days later the stitches gave way, causing severe hæmorrhage; the stitches were re-introduced; the patient made a good recovery, union being perfect.

In every case of operation on the cervix a small strip of

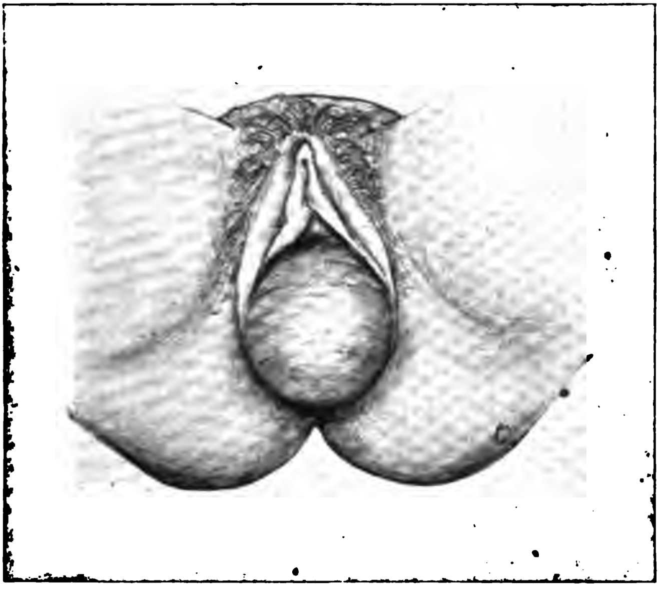

Plate V.—A case of Cystocele.

iodoform gauze is passed into the cervix and the vagina is loosely packed with the same.

In most cases silkworm-gut sutures are used, occasionally catgut, and the former are removed on the twenty-first day. The patient is not allowed to sit up in bed until the twelfth day, is allowed up on the sixteenth, and leaves the hospital the day after the removal of the stitches. During this period vaginal douches are administered only in exceptional cases. An aperient is usually given on the evening of the second day. The results from this treatment have been remarkably good.

Hypertrophy unassociated with laceration was found in nulliparous women in five cases, in four of which Schröder's amputation was performed; in the other, the cervix was so elongated, with stenosis of the internal os and severe dysmenorrhœa, that a posterior division was considered necessary in addition to circular amputation.

In one case, occurring in a 1-parous woman, there was a hypertrophic growth on the posterior lip of the cervix, which filled up the posterior fornix. This was amputated, and on microscopic examination proved to be benign. In another case the patient had been only once pregnant, and had miscarried at six months; the cervix was hypertrophied and elongated, with no evidence of laceration. Amputation by Schröder's method was performed.

Erosions occurring in nulliparæ, which were unassociated with marked hypertrophy of the cervix are recorded in only four cases. In two of these the erosion was excised by Schröder's method; one was cauterised with nitric acid, the other was curetted.

We might remark here that in every case of operation on the cervix a preliminary curetting of the uterus was done.

Malignant Disease.—It is unfortunate that patients suffering from this terrible disease seldom seek advice sufficiently early to admit of radical treatment; and often the disease is so far advanced that any but palliative treatment is contra-indicated. Of the eleven cases admitted during the year nine were of this nature, in two of which the palliative treatment recommended by Marion Sims—that of curetting followed by application of strong caustics—

was adopted, with temporary benefit; in the other two, where radical treatment was attempted, vaginal hysterectomies were performed. One of these unfortunately died; the case will be described later.

Polypus.—This usually occurred in nulliparous women, and was of the mucous variety. In one case there was a myoma growing in the fundus of the uterus; another was interesting from the fact that nine months after the removal of the polypus the patient returned with a large fibrous polypus, filling up and distending the cervical canal, and, in addition, a small myoma in the body of the uterus.

UTERUS.

Pathological Anteflexion or [and] Stenosis of the Uterine Canal—

(*a*) Occurring in married women whose chief symptoms were sterility or [and] dysmenorrhœa. Twenty-three cases are recorded under this heading, in fourteen of which Dudley's modification of Marion Sims' operation—that of posterior division of the cervix—was performed, the uterus being at the same time curetted; in six cases the cervical canal was simply dilated and the uterus curetted, and in one case dilatation of the cervix was considered sufficient. In two of these cases iodised-phenol was injected after curetting on account of concomitant endometritis.

Two other cases were admitted suffering from vaginitis, which alone was treated.

(*b*) Occurring in unmarried women whose chief symptom was dysmenorrhœa. Fifteen cases presented themselves, in ten of which posterior division of the cervix was performed, and in four the cervical canal was dilated and the uterus curetted. In one of the latter cases iodised-phenol was injected into the uterus after curetting for a similar reason to that above stated.

One case which had been dilated and curetted on a previous occasion without any apparent benefit, and in which the left ovary was prolapsed into Douglas' space, was treated with glycerin and ichthyol tampons.

There was one case of pathological anteflexion which was associated with repeated abortions at less than three months.

Patient had been married eighteen months, during which period she had aborted three times; she was simply curetted.

Pregnancy.—Eight cases of hæmorrhage were admitted, in which it was found that the patients were pregnant for periods varying from three to six months. In four of these the hæmorrhage was so excessive that it was considered necessary to empty the uterus. Laminaria tents were placed in the cervix and the vagina was tamponed to bring on labour. In one the cervix was dilated and a large quantity of treacle-like matter, together with a dead ovum, was removed with a Rheinstädter's curette. In another case the hæmorrhage ceased shortly after admission and did not recur. Two were transferred to the maternity wards. Thirty-three cases of incomplete abortion were admitted; a large number of these were recent, and were curetted with Rheinstädter's curette, but several of them were of considerable standing, in which the sharp curette was used. In six cases the hæmorrhage after curetting was so severe that it was necessary to plug the uterus with iodoform gauze. A temperature occurred in two cases, but after the administration of a uterine douche it fell to normal and continued so; in both these cases there was retroversion of the uterus.

Prolapse.—Cases of prolapse were usually associated with cystocele and rectocele and were treated accordingly. In one case, where the patient was seventy-four years of age, a pessary was considered sufficient. In another case vaginal hysteropexy was performed in addition, and is recorded under that heading.

Procidentia.—In one case the treatment was similar to above, with vaginal hysteropexy; in the other, in addition to vaginal operations, the cervix was amputated by Schröder's method on account of considerable hypertrophy.

Endometritis.—This complaint was often associated with other gynæcological complaints, especially metritis. The treatment adopted in forty-seven cases was curetting alone; in cases where the endometrium was very abundant, iodised-phenol was injected with a Braun's syringe immediately after the curetting, and in some instances was repeated seven days later; in two instances perchloride of iron took the place of the iodised-phenol. We very much regret to have to record a death under this heading, details of which will be found later on.

Subinvolution.—As all the ordinary text-books omit to mention the symptoms of this condition in the early stage, it will not, we think, be out of place to do so. They are:—*Post-partum* intermittent hæmorrhages, or a red discharge continuing after confinement for varying periods exceeding one week, associated with a bearing-down or dragging feel in the pelvis, with an undue enlargement of the uterus, which is usually tender on palpation. The treatment consisted in curetting the cavity of the uterus, the injection of iodised-phenol, together with the administration of ergot and iron.

Retroversion and Retroflexion.—These cases were treated by curetting and the introduction of a pessary. The pessaries selected were those of Smith-Hodge and Thomas, the latter being used in cases of hypertrophy or elongation of the cervix. In those displacements which were caused by adhesions of a recent nature, Schultze's method was adopted to break them down. Where the adhesions were too firm to break down, the treatment adopted was rest in bed, with the use of ichthyol and glycerin tampons and hot douching.

Fibro-Myomata.—Six of these cases refused operation and were discharged, one of which had been transferred from the maternity side, the myoma being of considerable size. Two of them were curetted, as the myomata were of small size and symptoms trifling. Of the others—all of which will be detailed under their special operations—eight were removed by panhysterectomy, two by myomectomy, two by morcellation, in two ovariotomy was performed, and in one casesalpingo-oöphorectomy.

Bicornuate Uterus.—An interesting case of this description came under treatment for dysmenorrhœa and menorrhagia. In addition to the bicornuate condition the septum persisted to the os externum, the sound passing up at either side of it into the corresponding cornu. There was, in addition, a multilocular cyst in the anterior vaginal wall, which has been recorded under that heading. (Plate VI.)

(*To be concluded.*)

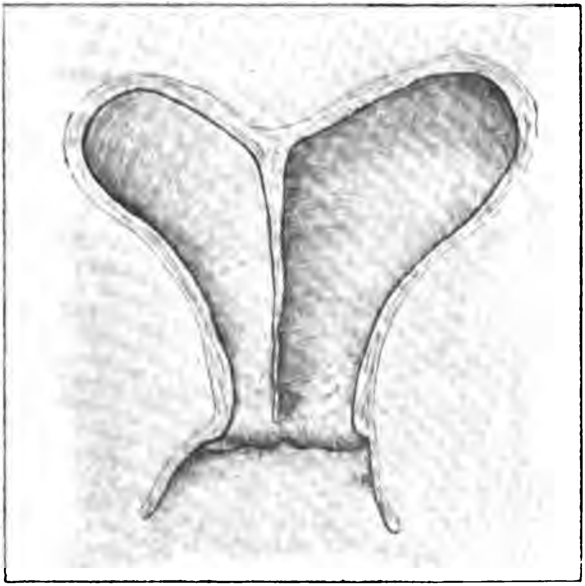

Plate VI. (Diagrammatic).—Bicornuate Uterus, septum persisting.

Art. V.—*Old Irish "Herbal" Skin Remedies.* By H. S. Purdon, M.D.; Consulting Physician Belfast Hospital for Diseases of the Skin (18 Beds).

Through the courtesy of R. M. Young, Esq., B.A., M.R.I.A., I have had the opportunity of looking over a rather rare book—viz., "A General Irish Herbal, Calculated for this Kingdom, giving an Account of the Herbs, Shrubs, and Trees, naturally produced therein, in English, Irish, and Latin, &c. By John Keogh, A.B., Chaplain to the Right Honourable the Lord Kingston. A.D. 1735." As the book contains a good deal of the prevalent ideas current close on two hundred years ago, it may be more or less interesting, at the end of the 19th century, to note some of the vegetable remedies and "simples" used by our Irish forefathers towards alleviating various diseases, especially those recommended and employed in cutaneous medicine.

Following the order of the book, which is arranged alphabetically, I shall merely extract the remarks of the author as regards the best-known herbs, omitting all botanical details, and first on the list is *Agrimony* (in Irish, *Murgrine* or *Murgrabin*), recommended for "obstruction of the liver," whilst the leaves, pounded with hog's lard, are said to heal and cicatrise old wounds. The leaves, when bruised, and "a cataplasma made of them, with yolk of egg, flour, and honey, is good to be applied to a cut or a gall after riding."

The plant known as *All-heal* (in Irish, *Furrbum*), which grows in ditches and watery places, flowering in June and July, is considered "an excellent vulnerary applied to green wounds, whilst its tops stop all sorts of hæmorrhages."

Barley is in Irish *Oer-nabeog*.—The author recommends a decoction to be drunk "as exceeding good in all kinds of fevers, in the stone, gravel, and heat of urine," whilst an infusion of the Bramble or *Blackberry* bush (in Irish, *Driseog*) made from the "tops and young buds, cures the sores and ulcers of the mouth, throat, and uvula, if held in the mouth" for some time. It also "stops fluxes of blood," whilst "the leaves, stamped and bruised, cure the piles."

For removing freckles and preventing a "sore" spreading, our author recommends an oil made from the root of *White Briony* (Irish name, *Urinagh*).

The well-known *Butcher's Broom*, called by the Irish *Brusglagh*, and still esteemed and used for its diuretic properties, is advised to be given, as the "decoction of it breaketh the stone and expelleth the gravel."

Buckbean (the Irish *Ponair Capuil*) is considered "very serviceable in gout, rheumatism, and dropsy."

The *Carline Thistle* (in Irish, *Fobenanemine*) is to be taken in a powder against the "pestilence," or, held in the mouth, it cures toothache, "but, applied externally with vinegar, cures scurf and itch."

Even in the present day, in various parts of the country, *Chickenweed* (called in Irish, *F'liagh* or *Bliagh*) is considered a powerful remedy "against scorbutic heat, itch of the hands. It is cooling and moistening, good against inflammations, St. Anthony's Fire, all phlegmons or hot swellings, and pains in any part of the body, the juice, or a poultice with hog's lard, being applied."

Goose Grass Clivers (in Irish, *Garub-Luss*) is to be used, our author states, "against the king's evil, all kernels and wens." It is called goose grass clivers "because it is exceeding good to fatten geese."

The *Great Water Dock*, still used in cutaneous medicine, as in Rumex ointment, introduced by the late Sir James Simpson for the treatment of acne rosacea, is known to the Irish in former years as *Cuppoge More Isky*, and, according to our author, is exceedingly good in scurvy, ulcers, and fluxes.

In many rural parts of Ireland at the present time the inner bark of the elm tree is used as an application to skin affections and "boils." A short time since a very respectable woman brought her young daughter to me suffering from a patch of lupus on her forearm, and which she was poulticing with the inner bark of the elm. The Irish called the elm *ailm*—in fact, it is the name of the first letter, ᴀ, of the Irish alphabet, for, as is well known, every Irish letter is the name of a tree. Thus—b, *Beit*, a birch tree; c, *Coll*, a hazel tree, and so on.

However, to return. As a cosmetic, "a liquor made from the leaves" of the elm "taketh away freckles, pimples, and spreading tetters, whilst the inner bark of the elm heals and consolidates green wounds, bruises, and fractured bones."[a]

The well-known *Yellow Water Flag*, or bastard Acorus, called in Irish *Felister*, *Silistar*, also *Sillisdrinn*, was, a couple of hundred years ago, given in a decoction of the root to stop dysentery, but the author states "is a good cure for leprosy"—a disease prevalent in Ireland till the 17th century. In "Ledwich's Antiquities of Ireland" it is stated that the ancient Irish were very liable to leprosy, contracted from their constant use of raw meat, and that whisky was held in great repute as an unfailing remedy. According to the late Sir Erasmus Wilson,[b] the last case of leprosy that occurred was that of a man named John Berns, "who, in 1798, was a patient in the Edinburgh Infirmary. This man was a native of Shetland, and a direct descendent from leprous ancestors." The *Yellow Flag* was also used in various ways for the treatment of "scald-heads, scabs, itch, tetters, and *all* cutaneous eruptions."

Hellebore (in Irish, *Daboube Dub* or *Crubmahuin*) is also recommended for obstinate skin diseases.

Hound's Tongue, a rather rare plant, which I have seen growing on the sand links at Newcastle, Co. Down, called in Irish *Tanga Gohow*. The root is said to be pectoral and styptic, "but exceeding good for wounds, ulcers, and gonorrhœas."

Saint John's Wort (Irish, *Benhair Allais Muire*), also named, I presume, after St. Collumkille, as *Ted Collumkill*, is plentiful in some parts of the County Down. Our author remarks that it "is of a hot and dry nature, a great diuretic, lithontriptic, styptic, and balsamic. The seeds, drunk in infusion for forty days, cureth the sciatica; the same pounded is good to be "applied to burns, wounds, and rotten ulcers."

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[a] In Acne Rosacea the late Dr. Neligan, of Dublin, prescribed iodide of potassium in two grain doses taken in two ounces of the decoction of fresh elm bark, with the addition of a quarter of a grain of iodine at bedtime. In his work "On Medicines, &c.," 5th ed., page 540, Dr. Neligan further remarks that "Elm bark is a most useful tonic, the decoction and syrup determine to the skin, and are of much service in the treatment of cutaneous affections, especially when occurring in debilitated habits."

[b] Diseases of the Skin. 6th Edition.

Mullein (Irish, *Cuineail Muire* or *Cunellmurry*), recommended some few years ago by Dr. Quinlan as an old Irish remedy for phthisis, is, the author remarks, given in "diseases of the lungs, such as coughs, spitting of blood," &c. "The country people report that it preserves him that carrys it about with him from enchantments and witchcraft."

Osier (Irish, *Soileog* or *Saileagh Isky*, hence the common word for this plant as *Sallies*).—Amongst other uses, we are told that the "ashes of the bark, if mixed with vinegar and applied to warts, causes them to fall off." It also takes away "callous or hard skin that is upon the hands or feet." Our forefathers thus anticipated the modern uses of salicylic acid for treatment of warts and corns."

The *Red Pimpernel*, as well as the Blue Pimpernel (in Irish, *Seamar Muire* or *Luss-na-Columkill*[a]—that is leaf of Columkill).—The juice of this plant is to be "snuft into the nostrils for humour in the head, or to clean corrupt ulcers."

The well-known *Ragweed* or *Ragwort* (in Irish, *Pfultan*, *Bugih*, *Balkisan*, or *Bocellan Buigh*).—An infusion of the leaves, taken fasting, is a very old Irish country remedy for jaundice, but it was formerly used outwardly to "heal wounds, fistules, and ulcers."

The *Rest Harrow*, a well-known flower on Newcastle Sand Links, Co. Down, is called *Chuinvalegh* or *Trian Terrain*, was said to be a good herb, with diuretic properties. If applied externally "cured" scrofula and glandular swellings?

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[a] Columba, or as he was called Columcille (Dove of the Church), was born at Gartan, Co. Donegal, Dec., A.D. 521. He belonged to the famous sept of the O'Donnell, and was educated at the Monastery of Clonard. He is best known as the founder of Iona (see the late Professor Stokes's "Celtic Church"). On the outside of east end and above window of Down Cathedral three old and weather-worn small statues are still to be seen, representing St. Patrick, St. Brigid, and St. Columcille. Formerly their relics were said to be contained inside the church, hence the rhyme—

"In Down three Saints one grave do fill—
Patrick, Brigid, and Columcille."

Owing to an "Irish row" between St. Finnian, Abbot of Movilla (ruins of which are still to be seen half a mile or so from Newtownards, Co. Down), and St. Columcille, about a copy of a Latin Psalter the latter had made without permission of the former Saint, Scotland and North of England owes its conversion to Christianity.

Samphire (in Irish, *Greirig*) grows on rocks near the sea. The Isles of Arran and the West of County Clare are said to be favourite localities. A soap is made by a well-known firm with samphire as an ingredient.

Saxifrage, the golden (in Irish, *Luss-na-liub*), was used internally for flatulence and colic, whilst *Scurvy Grass* or *Billar-traibe* "does cleanse and purify the blood, the juice or infusion of it being drunk. It is an excellent remedy against corrupt and rotten ulcers of the mouth if they be often washed with decoction thereof. It cures scabs, itch, freckles, and other cuticular eruptions if it be applied with vinegar."

Sow-bread or *Nunsinugh*, a plant I never heard of, the roots of which, our author states, are round like a small turnip, is found growing wild in counties of Leitrim, Galway, and Roscommon. It flowers in September, and is a good cathartic. A drachm of the powdered root is the dose, and recommended for jaundice or to "expell placenta," whilst outwardly its use cures "the mange and itch."

Tormentil or Setfoil (in Irish, *Leanarthy*), as well as *Tansie* or Silverweed, the *Brisklane* of the Irish, is well known as an astringent. The *Vervein* (in Irish, *Vuegagh*); the *Violet* (Irish, *Sail-covagh*); the *Yarrow* (Irish, *Abair Tulbum*), as well as many other wild herbs, are mentioned, but I have, however, selected the best known, so as to give an idea of the "simples" used in this country, and which may not be without some historical interest, especially as so many societies now exist for the preservation of our ancient Celtic language, music, &c., the old Irish names from Keogh's work will be, to those who take an interest in these things, of more or less value.

BRONCHO-PNEUMONIA IN CHILDREN.

Dr. Gaston-Lyon (*Revue de Therapeutique*) recommends the following prescription:—Syrup of gum, 60 grms.; syrup of tolu, 60 grms.; cognac, 10 grms.; acetate of ammonium, 1·5 grms.; benzoate of sodium, 1·5 grms.—Mix. A dessertspoonful every hour or two hours, according to age. If the cough is very troublesome a little of the tincture of belladonna may be added to the above prescription.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Genius and Degeneration: a Psychological Study. By WILLIAM HIRSCH. Translated from the Second Edition of the German Work. London: Heinemann. 1897. 8vo. 333 pp.

"As for me, I have gone beyond that happy time of life when the human heart overflows with hope, but yet I can declare that my faith in the amelioration of the future destinies of humanity has not grown weak, and that I believe with all the energies of my soul in the happy, and I may say the necessary, influence which physicians are called upon to exercise over these destinies."[a]

In these noble words, written in December, 1856—words whose hope has been, to a large degree, justified by much that has been done for humanity since that date—the great French physician records his enduring trust in the potentialities of human nature and of medical art. In a note to the preface to his great work, from which this extract has been culled, Morel further proclaimed his hopefulness, for he announced that he intended to publish as the complement of the treatise on degenerations a work upon physical and moral hygiene. His industrious life was not long enough to carry out all the projects of his teeming brain, or else, no doubt, though some of his hygienic rules would now sound quaint and antiquated, much that would have been valuable would have remained for us.

And this Morel is the man whose work is the foundation upon which there has been built up an absolute mountain of modern pessimism.

It would be a task of no little interest to follow out the various changes in opinion which have led from Morel's point of view to that which has been assumed by his successors in the literature of degeneration. It is a task which we cannot enter upon, at least now.

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[a] Traité des Dégénérescences Physiques, Intellectuelles et Morales de l'espèce humaine.—Préface.

The object of the work at present before us appears to be to clear up certain misunderstandings in the domain of psychiatry which have arisen of late years, chiefly through the loose writing of certain continental authors. Psychiatry has, unfortunately, always been a subject which readily lent itself to all kinds of nonsensical handling. The uncertainty of its scientific foundation, and the vast interests outside mere medicine which attach to insanity, have tended at once to excite the popular imagination, and to render every dabbler in literature competent in his own opinion to deal with all the problems of this subject.

Hirsch sets out by endeavouring to describe in a general and popular way what insanity is. He rightly associates the beginning of its serious study with the period, a century ago, when the introduction of more humane methods of treatment turned asylums from the worst kind of prisons into something approaching and developing towards the modern ideal of special hospitals for the diseases of the highest nervous centres. There is, indeed, no better test of the progress of a country in civilisation than its method of dealing with the insane. Our author briefly refers to some of the important social results of ignorance on these topics in olden times: to the many unhappy wretches who were executed for witches and who were really only lunatics, and, on the other hand, to the many miserable people, free even from the guilt of lunacy, whose lives were forfeited to charges of witchcraft made by paranoiacs and supported by the ignorance of contemporary "justice."

Hirsch's account of insanity shows how essential experience of its actual symptoms and judgment in weighing evidence are to those who have to criticise this disease, since, as he points out, many of the signs of insanity are but exaggerations of conditions existing in the sane.

To be sure, a similar statement can be made with regard to all diseases, and is only the more true of insanity, because its criteria are more difficult to determine, owing, largely, to the patient's inability to appreciate his own state. Hirsch quotes Claude Bernard:—"Health and disease are not two essentially different forms, as the old physicians could believe, and as many practitioners still believe. They are not to be regarded as distinct principles, as entities disputing for the living organism and making it the theatre of their war. That sort of ideas belong to the medical lumber room. But, in fact, between any form of disease and health there are only differences of degree. No disease is anything more than an exaggeration, or disproportion, or anharmony of normal phenomena."

A division of the work before us (Dr. Hirsch does not call his divisions chapters) treats of "The Psychology of Genius," and extends to fifty-three pages. It is the peculiar reproach of the authors whose views Hirsch sets himself to combat that they are not very verbose themselves but the cause of verbosity in others. Innumerable extracts from poets and prosemen lead to the conclusions that "*genius in different departments is referable to the most diverse psychical conditions,*" and that "*no psychological meaning can be attributed to the word genius.*" In these conclusions we agree with our authors, but we are inclined to sadly re-echo the enquiry of Sam Weller's schoolboy, who, on getting to the end of the alphabet, asked "Was it worth going through so much to gain so little?" With many of Dr. Hirsch's casual remarks, by the way, we must express our dissent. He regrets that we have no detailed information of the life and opinions of Shakespeare. Now, we have always regarded the merciful, the providential (with reverence be it spoken), obscurity which surrounds the private life of Shakespeare as one of the few spots of unalloyed gold which illuminate the pages of literary history. Have we not Keats and Fanny Browne? Have we not Byron and Mrs. Beecher Stowe? Have we not all the miserable history of Shelley and his wives and his visions? Have we not Richard Savage, sleeping on a bunkhead, his paternity in committee? And if we want anything still more stimulating to curiosity, have we not Paul Whitehead, who "hung loose upon society?" Nay, have we not "the songs that the Sirens sang, and the name that Achilles assumed when he hid himself among women," which, we have it on high authority, "though puzzling questions are not beyond all conjecture."

But satisfied that we are too small powder for Dr. Hirsch's heavy artillery, and confident that our worst extravagances will not result in yet another controversial tome, we will venture even further and say that we have had a little too much even of the divine Goethe, that there is a suspicion of vulgarity in his innumerable Wilhelminas, and Fredericas, and the rest of them, and that as he resembled Solomon in all his glory in this particular, so his portentious selfishness brought him near in its common grossness to the great Napoleon, for whom he entertained so high an admiration. Goethe united with great genius a degree of vanity which makes his reminiscences, and introspections, and personal observations on his own methods perfectly untrustworthy to our minds, even supposing that at any given moment he was not indulging himself in that passion for childish symbolism and unmeaning mystification which characterised his later years. Therefore, while we do not for a moment contest his right to the title of genius, we know of few great men whose confidences with regard to the characteristics of that state are of less value.

Having come to the conclusions to which we have referred, our author seems to think it almost necessary to apologise for going on to compare genius and insanity, and no wonder; for to weigh two imponderables against each other appears to be a task only fit for the learned professors of Laputa. We are consoled, however, by the assurance that the comparison, if we are very careful, "can hardly do any harm." True, paper, ink, and time being cheap.

How genius and insanity came to be associated together Hirsch sagaciously points out. Genius=inspiration; insanity=demoniacal possession. (Witchcraft, perhaps, formed a link in the same series of ideas, since the witch was now an inspired seer, now a mere Satanic agent.) Thus the notion is essentially an old superstition, although it has got tricked out in scientific clothes of recent years.

Discredited by its real origin, the doctrine that genius is a form or mode of insanity is further invalidated by the want of logic shown by its advocates, as well as by their amazing credulity. As an example of the former defect, Hirsch points out the absurdity of saying that because such men as Goethe and Johnson had hallucinations they were therefore insane, whereas the inference from the facts in question is rather—"Hallucinations, though frequent in the insane, occur among men who are perfectly sane, sometimes even among men of the highest intellect, and are therefore not necessarily indications of insanity."

He further rightly insists on what must have struck every reader of Lombroso—namely, the almost incredible absence of all critical faculty with which every silly story about distinguished men is accepted for scientific verity. The hallucinations of Socrates, of Brutus before Philippi, of Luther when he threw the inkpot at the devil, and a score such old wives' tales, are repeated with an assured iteration such as modern exegesis hardly permits to narratives claiming inspiration. As for Benvenuto Cellini, whose stories have so long been part of the psychologist's stock-in-trade, we have no patience with that gentleman save in his capacity as a silversmith. How anybody who has read him can pretend to attach any faith to his experiences is beyond our imagination. There, indeed, we find stories of visions, &c., but they are mixed up with boastful narratives of his affairs with women, quite in the taste of the time, and with such tales as that of the Cardinal (or was it the Pope?) who tried to poison Benvenuto with a powdered diamond (deadly drug), and was cheated by a fraudulent jeweller (set a thief to catch a thief), who substituted pounded glass as being cheaper, and thereby saved his brother artist's life. If we can believe this choice tale or the account of how Cellini, having fractured his leg in breaking gaol, walked several miles, dot and carry one, on the projecting end of the broken bone, then we may proceed honestly, if not wisely, to argue on the assumption that Cellini did not lie when he tells us of the hallucinations to which he was subject. The credulity of Lombroso is shown by the sentences from Trélat, which he quotes with apparent approval (we quote from the English translation of Lombroso: the passage is not noticed by

Hirsch):—"Under the influence of insanity an ignorant peasant will make Latin verses; another will suddenly speak in an idiom which he has never learnt, and of which he will not know a word after his recovery. A woman will sing Latin hymns and poems entirely unknown to her; a child, wounded on the head, constructs syllogisms in German, and is unable, when no longer ill, to utter a single expression in that language." Somehow we recall the words of the genial old sceptic Montaigne—"Save in religion I believe no miracles." At any rate, seeing is believing, and we do not see insanity like this in these islands. Until we do, we will decline to base deep theories of genius and insanity on mere silly fables.

"It is true," says Dr. Hirsch, "that between famous men—the so-called geniuses—and the insane many resemblances may be traced." And here is just the point of the whole argument. The supporters of the doctrine that genius is a mode of insanity, committing one of the commonest of logical blunders, begin by assuming that insanity is a definite thing and a thing apart. Arguing in the same manner, but on the other side, we would willingly undertake (if we saw any probability of our lives being prolonged to an equality with those of Hilpa and Shalum) to prove, by endless arguments and innumerable examples, that sane men and geniuses have many points in common, such as that in both categories are frequently to be found men who are spare in youth and too fat in middle age, are not infrequently to be found men who are below the middle height, are often to be found men who do not marry, or who marry unhappily, or whose wives have no children. If this sounds absurd, kind reader, note that these are some of the points that are held to "prove" that genius is a form of degeneration.

There is certainly one grave inconvenience which will result from any general acceptance of Lombroso's views as to the relation of genius to insanity. Every writer aspires to be a genius; and even now the world groans under the weight of literature which it has to bear. What is to become of us when every bore tries to prove his genius by showing that he is a madman as well as a dunce?

Surely a saner view of this question is taken by Esquirol, in a work which the modern scientific world has perhaps forgotten.[a] "Dryden has said that men of genius and lunatics are closely akin; if this means to say that men who have a very active and very disorderly imagination, who have a high degree of exaltation and a rapid movement of the ideas, exhibit close analogy with the insane, it is right; but if it is intended to convey that a high intellectual capacity is a predisposition to insanity, it is misleading. The greatest men of genius in the sciences and arts, the greatest poets, the most clever painters, have preserved their reason to extreme old age. If we have seen some poets, painters, musicians, or artists who have become insane, it is because these individuals have joined to a very active imagination grave errors in their mode of life (*grands écarts de régime*) to which their organisation exposed them more than other men. It is not because they use their intellect that they lose their reason; it is not the prosecution of science, or arts, or letters which is to blame: Men who are gifted with great powers of thought and imagination have a great need of sensuous gratification—therefore, the greater number of poets, musicians, and painters, driven by this sensuous need, give way to many errors in their way of living, and it is these errors, much more than excessive study, which are the real cause of insanity amongst them."

Are we too sceptical if we doubt even the good old superstition that the flesh is more exigent in the great wit than in the boor? Have we not heard the same thing said of the high born as opposed to the "common people?" What sensible man believes this, or fails to see that idleness and the want of a fixed purpose in life is the real cause of the viciousness of the wealthy? And the same thing is surely true of the "genius." His work is unequal, depending to some degree on the proverbially uncertain will of Minerva; his profits are uncertain; his spurts may be great but his intervals of idleness are many, and so his habits grow irregular: he has not the sober old honest John-Trot ideal of respectability to steady him, and he readily falls a victim to those temptations that are always soliciting the unoccupied and the unwary. "That way lies madness" for many, who may be afterwards too apt to soothe their poor vanity with myths about "the artistic temperament" and the kinship of genius with immorality and lunacy. We hear very little about the irregularities of genius in any calling when it has become a steady, respectable, money-making industry. When actors are knighted, when painters get baronetcies, and poets peerages, we find among these various classes, not that aberration which was once esteemed a sign of mental superiority, but rather that "strict attention to business" whereby "we seek to merit a continuance of public favour."

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[a] Maladies Mentales. Vol. I. § 2. Les Causes de la Folie.

One of the dreariest chapters in Dr. Hirsch's work is that on the influence of education upon genius. Such amazing floods of twaddle have been poured out on the subject of heredity that it appears now to be necessary that a learned author, addressing a presumably intelligent reader, should feel called upon to prove that genius is influenced by education. How wonderfully the world is changed since the poor Stratford player supposed people would laugh at Dogberry's assertion that "to read and write comes by nature."

From the special chapter on degeneration it is impossible to make out what is meant by that term. It is pointed out that Morel used it for conditions resulting generally from well-marked physical causes, which produce a progressive deterioration of the race, and end in its extinction. Other authors, on the other hand, use it as a vague synonym for hereditary tendency towards insanity. Lombroso employs the term as almost a synonym for insanity, and many modern writers use it as an indefinite term of abuse. To this last class belongs Nordau, whose great (*i.e.*, by weight; ponderous) book on degeneration has excited a good deal of attention, and is probably the indirect cause of the production of the work which we are reviewing. Much of the latter part of Hirsch's book is devoted to refutation of Nordau. Nordau has attracted far more notice than he deserves. He is one of those gentlemen with a large stock of expression in bad need of an investment, of whom Theophrastus Such tells us, and he uses the pseudo-scientific notion of degeneration as a stalking horse, from behind which to let fly a quantity of not very good-natured and very indiscriminating criticisms on modern literature, modern art, modern tendencies, and modern things in general. Though he laughs at the puerile French phrase *fin de siècle*, and points out that a century has no beginning or ending save from the mere calendar makers' point of view, he thinks, or pretends to think, that the world is reaching rapidly a *Götterdämmerung* of mere annihilation of all virtue and intellect through the spread of degeneration. Nothing is too small for this William II. of literature. The furbelows of ladies' dresses, and the hideous and silly derangements of their hair, are signs of the impending desolation of the race. Hats and bonnets are as portentous as the beard of Hudibras. The vigor of the matinée hat is a token of degeneration (we could wish it would itself degenerate). Painting is not specifically mentioned, possibly because Nordau must be aware from the literature of his own race that the painting of ladies' faces is at least as old as the days of Tyre and Sidon. But why are the powdered wigs and the patched faces of a hundred years ago not referred to? And what about hoops and quilted petticoats,.and waists worn by some strange anatomical arrangement under the arm pits? Nay, has not the frail bark of human progress but yesterday, as it were, triumphantly overcome the dangers of the Scylla chignon and the Charybdis crinoline? Is it to be now hopelessly shipwrecked on a Vandyked fichu or a matinée hat? But let it not be supposed that this great prophet confines his wrath to women's follies. His mighty prototype, Isaiah, did not more fiercely denounce the idolatrous worship of carved images than Nordau does the modern taste for collecting old furniture, armour, and bric-a-brac. He calls this oniomania. Let us whisper the word lightly lest the echoes of Liffey-street should catch it. Horrid thought! whatever may be said of general paralysis, or acute melancholia, or other forms of mental disturbance, there can be no doubt that this form of insanity is spreading with deadly rapidity. But oh! ye collectors beware:

the twilight of the gods is approaching, in which no man will know Chippendale from Shereaton, or distinguish between a Waterford cutglass decanter and a Cypriote tear bottle.

Vanity and hysteria are devastating the human race, and all the gods of modern idolatry in art and literature are stark lunatics. Talking too much (hearken all ye brood of Parliament men, county councillors, and "P.L.G.s!) is onomatomania. Writing too much (tremble, all ye makers of big books about nothing, and especially ye stiff-necked and back-sliding controversialists on degeneration, who know the errors of your ways and will not give them up), is graphomania.

Needlessly repeating oneself (perpend, ye popular preachers, above all), is echolallia.

The writing of indecent books (hear! ye female syphilographers and male chroniclers of pure women), is coprolallia. All these terrible forms of insanity are not only on the increase, but they are indeed spoken of as if they had only just now come into existence, and are the mere forerunners of the destruction of the human race.

Not content with general denunciations, Nordau proceeds to denounce many of his contemporaries by name, and attributes to them hysteria, and graphomania, and coprolallia, and so forth, with a freedom which suggests to the author we are reviewing that these words are merely used as general phrases of disapprobation and reviling. They are fine examples of that use of words which Hobbes taught us to call "insignificant"—*i.e.*, words that merely express emotion and have no absolute significance in themselves ("such are oaths, and the like").

Hirsch sets to work with a solemnity that is prodigious to controvert Nordau. He protests against the indiscriminate use of terms, that purport to be terms of art, as mere phrases to express an author's distaste for certain other writers, and he enters into a somewhat elaborate defence of those who are besmirched. To expose Nordau's absurdities and contradictions, to find him guilty on his own showing of graphomania and egomania is easy enough, and it is not hard to show that he charges as degenerations against those whom he hates very ordinary faults of average human nature. One may well hold, as we do, that Ibsen is a dull impostor; that Tolstoi is a mere spasmodic; that Zola is a stinking scavenger; and one may regret the lucid intervals in which Verlaine and Nietzsche pour out uncleanly rubbish, without believing that the world is coming to an end through these men's degenerative tendencies.

We may deplore the silly, ignorant, and uncritical spirit of those who are always finding new and grotesque objects of worship; and when we hear that Maeterlinck is a modern and a superior Shakespeare, we may be tempted to recall with a laugh the American of whom Mr. Gladstone tells us, who said—"There are not more than six men in the whole city of Boston equal to Shakespeare." But even talking nonsense about any of the illustrious obscure, or crying up the glories of our Elijah Pograms, does not prove criminality or degeneration: it only shows that the poor sufferers labour under some of the commonest of human ailments, the silly vanity of the man who believes that through a community of heaven's fire he has "discovered" a genius, or the childish conceit of a mutual admiration society. Again, we cannot claim the universal knowledge which qualifies a man to be a critic of everything; but we do not like impressionist painting, and we think that those who make the indefinite art of music do the work of the more definite art of poetry make a mistake in not seeing that every material which the artist uses demands its own class of treatment and must obey its own rules. Nevertheless, there is nothing necessarily morbid or degenerative in either the painting of the impressionists or in the critical vagaries of the Wagnerists. To us it seems that to defend a musician from the charge of being, as a musician, a degenerate and a moral lunatic, is about the same as if we were to set to work to exculpate a telephone from the charge of possessing no family affections.

Perhaps the vague idea that the whole trend of modern art and literature is in a bad and low direction, is worthy of more serious attention; but even on that subject there is much to be said on the other side. In the first place, it is extremely difficult for contemporaries to tell which of the many currents that are always running hither and thither is the real main current. The direction in which public opinion is really flowing is often misunderstood even by the shrewdest and most unprejudiced observers. In every age many men have been found who could see nothing except what is bad in the tendencies of the day. On the other hand, we probably are in a period of what might be called low water in literature. Literary activity always comes in bursts. At present we are in a temporary state of quiet, but when the sun sets he rises again, and we need not fear that darkness, even if it increases for a time, will be eternal.

The assumption that certain evil tendencies in the literature of our time are either new, or are likely to spread till they ruin all literature, shows a singular ignorance of the history of letters. Here there seems to be a sort of rhythmical motion, and if we are just now passing through times of low morality and poor art, the tide will turn as it has often done before. If we take the trouble to think, we will see that Rabelais has not been surpassed by Zola, that Boccaccio is dirtier than Paul de Kock; that "beastly Skelton," and even the mighty Chaucer, said things that no modern lady novelist would dare to put on paper, and yet that literature has survived the aberrations of some of her greatest sons.

Further, in every period of extensive literary output a large quantity of inferior produce has been given to the world. Much of it has been highly fashionable, sometimes more fashionable at the time than the best material, but it has gradually or speedily perished, as we believe Ibsen, Tolstoi, and a hundred others will do again. Any student of Elizabethan literature must have marvelled at the wonderful ability of the many dramatists of that day, now virtually forgotten save in as far as they illustrate their great contemporary. But if any Nordau had then existed, what an awful warning of impending doom he might have drawn from the (graphomaniacal) pedantry of Ben, the monotonous magnificence of the rhetoric (echolallia) of Massinger, the sweet sentimental unreality (hysteria) of

Fletcher, the love of accumulated horrors which characterised Ford, who bathed in blood and trifled with incest; the fondness for terrible situations which deformed the work of the author of Titus Andronicus, the work of Webster, and occasionally of Marlowe.

But it is remarkable how little real knowledge Nordau shows, for one who assumes the *rôle* of universal critic. His book produces painfully the impression that he has read up certain authors for the purpose of criticising them, but that his acquaintance with general literature is scanty. This is certainly so with regard to English authors. The paternity of good sayings is so often confused that he may perhaps be forgiven when he attributes to Balzac a saying which Balzac expressly attributes to Sterne; but the following passage is inexcusable:—

> "Milton's description of hell and its inhabitants is as detailed as that of a land surveyor or a natural philosopher."

Who that reads this nonsense can believe that its writer has ever read the description of Satan—

" . . . . His form had not yet lost
All her original brightness, nor appear'd
Less than archangel ruin'd, and the excess
Of glory obscur'd, as when the sun new risen
Looks through the horizontal misty air
Shorn of his beams; or from behind the moon
In dim eclipse disastrous twilight sheds
On half the nations, and with fear of change
Perplexes monarchs. Darken'd so, yet shone
Above them all th' archangel," &c.

Could any human language be less like that of a land surveyor or a natural philosopher? He goes on—

> "Ruskin has in the highest conceivable degree this English peculiarity of exactness applied to the nonsensical, and of its measuring and counting applied to fevered visions."

And then proceeds to apply Ruskin's dicta with reference to the simplicity of early art being mere affectation when imitated in later days with a delightful innocence of the source of his second-hand inspiration.

But, *quo, Musa, tendis*, what has all this got to do with degeneration? That is just the question which puzzles us, and may well puzzle every reader either of Dr. Hirsch's most conscientious work or the voluminous, and not too conscientious, *mega kakon* of Nordau. What does it mean—*Dulce est dissipere in loco?* But no; both books are characterised by a portentous gravity entirely in keeping with the national traits of the races from which their respective authors have sprung, one of which in all its long history has produced but one humorist, Heine, and the other perhaps also but one, Jean Paul.

In Morel's expression of his honest views as to degeneration there was a germ of indefiniteness. The truly scientific work that he did has scarcely been followed up at all, but everything that was indefinite, vague, and merely suggestive has been developed till it has reached in Nordau the very acme of absurdity. This point having been attained, let us hope that real workers in the fields of psychiatry and anthropology will drop the vague word degeneration altogether, and try and use expressions which admit of some scientific definiteness, and which do not land us in mere rhetorical pessimism and a nonsensical philosophy of things in general only calculated to excite the laughter of gods and men.

The Determination of Sex. By DR. LEOPOLD SCHENK. Authorised Translation. London: The Werner Company. 1898. Pp. 173.

THIS essay is divided into three chapters. In the first the author gives an account of the numerous theories which have been published on the subject of his work, and from this review he concludes that only one of those theories has any value—this is the theory of *cross heredity of sex.*

> "In accordance with this theory a prominent phenomenon would be that the individual parents were not in a position to propagate their own sex, but were yet, under certain circumstances, capable of reproducing the opposite sex. If the father were the stronger a girl would result from the next impregnation; in the opposite case a boy."

This is a theory which has been very widely held, and Professor Schenk, in the second part of his work, seeks to place it on a firm experimental basis.

Imperfect metabolism is a cause of feebleness, therefore such imperfection in the mother would tend to the production of female ova. As a test of imperfect metabolism Schenk takes the presence of sugar in the urine:—

"Ovulation is never in any case altogether independent of the influences of diet and metabolism. In those cases where the combustion is of such a kind that unoxidised remains of bodies still capable of producing heat are found in the urine, the ovum in process of development in the human female, is never so highly developed as in the cases where no sugar, or at least no recognisable trace of it, can be found in the urine.

"*In the first case we shall have not only a less ripe ovum, but very likely also a less well-nourished ovum. An ovum of this sort has not so fully attained to all the characteristics and powers inherent in its protoplasm, and, in consequence, seems fitted to develop only a female individual. In such an ovum the several cell-products of the ovum, which have to develop themselves into the future embryo, will be arranged for the growth of the female. Not only will female organs of generation be developed from it, but also all the elements of the future individual will be feminine.*

"On the contrary, if in the mother-individual all the substances developed in, or taken into, the organism *undergo combustion in such a manner that no sugar is found in the urine, not even in the smallest quantities, then an ovum can be developed such as is required to produce a male individual. Out of its protoplasm, in the course of evolution, elements form themselves whence male cells are developed, which correspond to the development of tissues and forms of the male individual. Some of the cells—viz., those which ultimately become the elements for the continuation of the species—are planned for the male sex.*

"It follows from all this that the result depends to a great extent both upon the diet chosen, and upon whether it has been rightly chosen to suit the organism, whether it is possible to exert such an influence as may so support the ovum in its maturation that in its development it may form itself into a male individual. It must be observed in advance that such an influence as may be effective for the production of sex must not be applied to an already fertilised ovum, but must be applied to an ovum in development before its fertilisation"—

And must be continued for some time after conception until the sex of the future child shall have been determined.

In this extract the author's theory is given in his own words.

"The treatment consists in giving the mother a highly nitrogenous diet with fat, and adding only so much carbohydrate as is absolutely necessary to prevent its want being felt."

Some cases are given where the mother who had repeatedly borne female children was found to pass urine containing traces, more or less, of sugar. On being treated as above until the sugar had disappeared, and then being allowed to become pregnant, the children were of the male sex.

It is clear that while on this theory a desire for male children may be satisfied, "the wish to have female progeny is a desire for the gratification of which it is not at present possible to give any directions."

This work, like any written by such an eminent author as Professor Schenk, cannot fail to excite the attention and interest of the scientific world. The doctrine of cross-heredity has a certain plausibility, since it is evidently in the fitness of things that the feebler parent, who is herself likely to die first, should produce children of her own sex to replace her. But the test of feebleness assumed by Professor Schenk is to our mind altogether arbitrary, for the cases adduced are not those which would be called diabetic, but those in which the amount of sugar in the urine is not above that which is looked on as physiological. It would be impossible to accept the theory on the strength of the very small amount of experimental evidence as yet before us; but such as it is, it is of great interest, and will doubtless soon be put to such tests as will prove or disprove its value.

Tropical Diseases: a Manual of the Diseases of Warm Climates. By PATRICK MANSON, M.D., LL.D. (Aberd.); F.R.C.P. (Lond.), &c., &c. London, Paris, New York, and Melbourne: Cassell & Co. 1898. 8vo. Pp. 607.

IT is a long time since we read a book on a medical subject with more pleasure and profit than have come to us from a study of Dr. Manson's pages. Written by a master-hand in clear, simple language, this handy volume supplies a long-felt and ever-increasing want in medical literature. Day by day tropical diseases are attracting more attention, because day by day a continuous stream of Englishmen is pouring into distant lands, and especially into those which lie beneath tropical suns. Hence the singular appropriateness of the publication of the work at this particular time.

"A manual on the diseases of warm climates," writes the author in his brief and modest preface, "of handy size, and yet giving adequate information, has long been a want; for the exigencies of travel and of tropical life are, as a rule, incompatible with big volumes and large libraries. This is the reason for the present work."

Complete success has crowned Dr. Manson's efforts, and it is our pleasing duty cordially to recommend his work to both practitioners and medical students.

In a brief introduction Dr. Manson discusses the ætiology of tropical diseases—a term which he remarks "is more convenient than accurate." He explains that he uses the term "tropical" in a meteorological rather than in a geographical sense, meaning by it sustained high atmospheric temperature. By the term "tropical diseases," he would indicate diseases occurring only in warm climates, or which are—from one circumstance or another—especially prevalent in such climates. It must not be inferred from this, however, that high atmospheric temperature is the sole and direct cause of the bulk of tropical diseases. The more we learn about these maladies the less important in its bearing on their geographical distribution, and as a direct pathogenic agency, becomes the *rôle* of temperature *per se*, and the more important the influence of the tropical fauna, regard being had to the fact that modern science has clearly shown that nearly all diseases, directly or indirectly, are caused by germs.

In his book the author tells us that he has included certain cosmopolitan diseases, such as leprosy and plague, which, strictly speaking, do not depend especially or necessarily on climatic conditions. They have been practically ousted from Europe and the temperate zone of America by the spread of civilisation and the improved hygiene that has followed in its train. These maladies are now confined to tropical and subtropical countries, where they still survive under those backward social and insanitary conditions which are necessary for their successful propagation, and which are more or less an indirect outcome of tropical climate.

The work is arranged in seven sections, the respective subjects of which are—Fevers; general diseases of undetermined nature, namely beriberi, epidemic dropsy, and negro lethargy or sleeping sickness; abdominal diseases; infective granulomatous diseases; animal parasites and associated diseases, as they affect the circulation and lymphatics, the connective tissue, the lungs, the liver, and the intestines; skin diseases; and local diseases of uncertain nature, namely "goundou" or "anakhre" and "ainhum."

More than half the space devoted to fevers—126 out of 220 pages—is taken up with an admirable description of malaria, which is curiously defined as a "protozoal organism of warm climates." Surely the definition should run somewhat as follows:—"Malaria, a term applied to *poisoning by a protozoal organism of warm climates*, which, although ordinarily living in external nature, is capable of becoming parasitic and of multiplying in man." We are not sure that Professor Verneuil's word "Paludism," adopted by Laveran, is not a preferable term for the phenomena produced by what the latter author calls "palustral endemia." Dr. Manson's account of malaria is profusely illustrated with two coloured plates and twenty-one black and white cuts, most of which are original and have been prepared for this work by Mr. Richard Muir, of the Pathological Laboratory in the University of Edinburgh. The simplicity of Dr. Manson's description of the life-history of the *Plasmodium malariæ* is a triumph of didactic power and literary skill.

The other diseases described under the head of fevers are yellow fever, plague, dengue, Mediterranean fever, Japanese river fever, nasha fever, kala-azar, tropical typhoid, and heat-stroke (siriasis).

In his account of yellow fever the author perhaps does not lay sufficient stress on the fact that the brunt of the toxin-poisoning falls on the kidneys *rather than* on the gastro-intestinal tract. This is no doubt true, and constitutes the main danger to life in this dreadful disease. At page 134 Dr. Manson states very correctly that "in severe cases, particularly during the stage of depression, the urine may fall to a few ounces, and be loaded with albumin to the extent of one-half or even two-thirds. The more pronounced these symptoms, the graver is the prognosis." He points out that urea and uric acid are very much diminished, the former in severe cases falling to 1·5 gramme to the litre. The urine is almost invariably acid. Bile pigments show themselves in it towards the close of the disease, their appearance being regarded as a favourable omen. Hæmorrhages from the kidneys or urinary tract is not uncommon.

The following reassuring quotation from the section on the ætiology of bubonic plague is worth quoting at the present time, when so many of our fellow-countrymen are exposed to its infection in our great Indian Dependency :—

"Plague," writes Dr. Manson, "though 'catching,' is not nearly so infectious as are scarlet fever, measles, small-pox, or even typhus. Medical men, and even nurses, in clean, airy hospitals rarely acquire the disease, provided they have no open wounds and do not remain too long in close proximity to their patients. In cities the cleanly districts are generally spared. This was well exemplified in the late epidemics at Canton and Hong-Kong, where the airy, cleanly European quarters and the relatively clean, well-ventilated boat population were practically exempt; whilst the disease ran riot in the adjoining filthy, overcrowded native houses only a few yards away" (page 152).

In his account of beriberi, Dr. Manson more than once refers to the development of this disease in the overcrowded Richmond Lunatic Asylum, Dublin.

The first disease described under the heading "Abdominal Diseases" is cholera. But surely this is not a scientific classification. Typhoid or *enteric* fever has quite as good a claim as cholera to be regarded as an abdominal malady. Cholera, on the other hand, is as much a continued fever as typhoid is. Dr. Manson admits as much in his graphic account of the "stage of reaction." In this stage "a febrile condition of greater or less severity may develop. Minor degrees of this reaction generally subside in a few hours; but in more severe cases the febrile state becomes aggravated, and a condition in many respects closely resembling typhoid fever, 'cholera typhoid,' ensues. This febrile or possibly typhoid state may last from four or five days to perhaps a fortnight or even longer. In severe cases the face is flushed, the tongue brown and dry, and there may be a delirium of a low typhoid character with tremor and subsultus; or the patient may sink into a peculiar torpid condition" (pages 273, 274). He adds:—"Hyperpyrexia is an occasional though rare occurrence in cholera; in such the axillary temperature may rise to 107°, the rectal temperature, perhaps, to 109°; these cases also are almost invariably fatal" (page 275).

What we assert is that, from its bacteriological and ætiological relations, its pathology, and its clinical phenomena, cholera has as much right as enteric fever to be classed as a specific fever. "Cholera typhoid," says Dr. Manson, "must be treated much as an ordinary enteric fever." He had previously defined the unhappy expression "cholera typhoid" as denoting "a condition in many respects closely resembling typhoid fever." This febrile *or possibly typhoid state* may last from four or five days to perhaps a fortnight or even longer." It is perfectly well known that the "typhoid state" has nothing whatever to say to typhoid or enteric fever, although it may be present in severe cases of that disease. It is applied to the *typhus-like* condition induced by the action of a fever poison on the nervous and muscular systems, producing profound asthenia and adynamia alike. If then cholera typhoid is treated much as an ordinary enteric fever the patient will probably die, for very active measures will be required in order to save life.

Dr. Manson is much happier in his definition of dysentery, "a term applied to what is probably *a group of diseases.*" The curious disease known as "sprue," and described by Dr. George Thin, under the name of "Psilosis linguæ," in a monograph recently reviewed in these pages, receives full recognition in Chapter XXI.

Liver diseases complete the subject-matter of the third section. They include "Ponos," a peculiar disease, akin to the infantile biliary cirrhosis of Indian cities, which is endemic in the islands of Spezzia and Hydra in the Grecian Archipelago.

The infective granulomatous diseases, described in Section IV., include leprosy, yaws (framboesia), verruga Peruana, which is closely allied to, or perhaps identical with, yaws; ulcerating granuloma of the pudenda in both sexes, and Oriental sore.

It is in Section V., on Animal Parasites, that Dr. Manson is peculiarly at home; and, naturally enough, the first topic discussed under this heading is filariasis, with the elucidation of the phenomena attending which morbid state the author's name is so honourably associated. Dr. Manson's story of the *Filaria nocturna* and its wanderings reads like a fairy tale.

Endemic hæmaturia, or the bilharzia disease, caused by the *Bilharzia hæmatobia* (Cobbold), and characterised by the presence in the urine of the ova of that parasite, is fully described in Chapter XXXII. Similarly, the tale of the guinea-worm (*Filaria medinensis*) and her life history is told in graphic terms.

The volume is beautifully printed and well illustrated. There are two coloured plates, and no fewer than 88 other figures, including photographs and photograms. Considering its merits, it is a cheap book at half-a-guinea, the advertised price.

Diseases of Women: a Clinical Guide to their Diagnosis. By Geo. Ernest Herman, M.D. London: Cassell & Co. 1898. Royal 8vo. Pp. 902. 250 Illustrations.

The capacity to write an interesting text-book is rare, and this gift appears to be particularly uncommon amongst the authors of gynæcological works.

Dr. Herman is a pleasing exception in this respect, and it is therefore with feelings of gratification we take up this his latest contribution to surgical literature, knowing that its perusal will prove a pleasurable task.

Our readers will find the first chapters particularly instructive, and that dealing with neurasthenia cannot be too closely studied. This term, defined as a condition "in which there is increased reflex irritability, and diminished power of resistance to pain and depressing influences," is not to be confounded with hysteria or hypochondriasis. The author holds that in it there is in reality something to complain of, and believes that it has no necessary association with nervous mimicries of disease; it is not, however, uncommon to find these different conditions merging into and associated one with the other.

The public are apt to attach to the term hysteria an unsavoury significance, and it is for this reason, amongst others, most important to limit its field of application.

This the author has well done by dealing in so complete a manner with the causes and symptoms of neurasthenia. He considers that nervous exhaustion, the result of muscular or mental over-strain, is not infrequently found to account for it. "It may be that a precocious girl is encouraged by parents, who take information and accomplishments for education, to force her brain and neglect her body, not knowing that the first aim (chronologically) of education should be to produce a good animal."

Over-pressure at school may also easily induce the disease. Of symptoms, morbid sensations, digestive troubles, hysterical attacks, are amongst the most common, and are dealt with in a way that leaves nothing to be desired.

The chapters entitled "Headaches," "Pain in the Back," and "Chronic Abdominal Pain," will also repay those who closely study them.

Chapter VII. deals with methods of investigation, and amongst other plans the bi-manual exploration receives a prominent place.

Chapter XI. treats of uterine displacements in a manner more complete than we are accustomed to find in such works, and the different modes of operative cure—viz., ventral fixation, vaginal fixation, and Alexander's operation—extra-abdominal shortening of the round ligaments, are well described, the author giving his preference to the vaginal fixation—a plan which, in our opinion, does not in any way compare favourably with the Alexander operation.

Schultze's manipulation for the cure of fixed retroversion, with adhesions, is condemned. This consists of filling the rectum with water, and then, with the patient under full anæsthesia, bi-manual manipulation is exerted, two fingers being in the rectum and the other hand sunk deeply into the abdomen, so as to get behind the uterus.

The author fears that internal hæmorrhage or sepsis from the bursting of pus sacs may result from this; but these contingencies are rare, and so far as the latter accident is concerned should not occur. On the other hand, many women have been restored to health by it, nor do we think it compares as a dangerous proceeding with that which the author suggests—namely, anterior colpotomy and the breaking down of the adhesions by a finger passed into the abdominal cavity through the vaginal incision.

On page 182 we read that fæces matter is not septic, and that peritonitis following extravasation results from its irritating properties. This is an extraordinarily inaccurate statement, for the *Bacillus coli communis* has its habitat in fæces, and its presence there should not have been forgotten.

Chapter XVII. treats of Salpingo-Oöphoritis very completely, and is distinctly instructive. Palliative means for its relief, together with operative proceedings, are well discussed.

The author advocates antiseptic vaginal douches after labour so long as the lochia last, but admits that a person who does not understand surgical cleanliness may inoculate the patient by means of a dirty syringe while believing that the vagina is being asepticised. There is no doubt that the latter catastrophe can and does not infrequently occur, and when the uselessness of the operation is made evident by abundant and accurate statistics—as, for instance, those of the Rotunda Hospital, where the late maternal mortality from all causes works out at three deaths in about 2,500 cases. Moreover, these figures represent many exceptionally severe cases sent into hospital because of their severity.

In discussing chill as a supposed cause of perimetritis, we are pleased to read: "All modern research goes to show that there is no such thing as the production of peritonitis by cold."

The author deems it essential to discriminate between perimetritis with and without chronic tubal disease, and further says that it would be an enormous gain if we could distinguish between the cases in which the diseased parts contain cavities full of pus and those in which there is mere thickening. He adds that we cannot do this at present without watching the effect of expectant treatment.

These views should hardly be let pass unchallenged, for they by no means indicate the present position of our diagnostic skill. Perimetritis is probably always associated with tubal disease, and even were this not so, the discrimination between them would, as regards treatment, not be in the least essential, for the present practice is to treat all forms of pelvic inflammation, when recent, by the expectant plan, and the certainty of pus being in the tube is not considered by most surgeons an imperative call for operation within a few days or weeks of its formation. Where, then, is the enormous gain to be found in distinguishing between what are probably associated conditions.

Then, again, a pyosalpinx is a tumour that can, in the majority of cases, be diagnosticated with a considerable degree of accuracy, and certainly it is seldom difficult to distinguish it from a pachy-salpingitis, provided the tube has not emptied itself by bursting into some neighbouring viscera. Should the latter accident happen, the history of the case and the re-filling of the tube will generally suffice to make the case clear.

The succeeding chapter is devoted to Perametritis, and affords a very complete *résumé* of the subject. Here, again, the breaking down of old adhesions by bi-manual manipulation is condemned, while massage of the pelvic organs likewise meets with censure; but we gather from the author's writing that he has no more than a theoretical knowledge of these treatments, and his condemnation will, therefore, in no way affect those who have felt the adhesions tearing, and seen many patients restored to health, under treatment with both these methods, untoward complications being remarkable by their absence.

Tubal pregnancy is another of the good sections of this book.

The methods for dilating the cervix, as described by the author, including his antiseptic precautions, should never have appeared in so excellent a work, for in our judgment they are faulty almost in every detail. Sponge tents under no circumstances should find a place in a gynæcological work.

Laminaria tents are advised to be cut by a penknife into the required lengths, and dipped in 1 in 200 corrosive sub. in glycerin, to disinfect before using. Such a method for sterilisation is wholly insufficient, and instead we would suggest that they be boiled in super-heated alcohol.

Then, as to their mode of introduction, the author has chosen to describe a septic, difficult, and unsatisfactory proceeding, instead of one altogether free from these disadvantages.

The best curette is said to be a blunt one, and caustics are advised as a destroyer of the endometrium untouched by the curette. In our opinion, a sharp curette is in every way to be preferred to this clumsy expedient, which is by no means free from danger.

Myomata of the uterus are described under the old and somewhat incorrect name, Fibroids. This section is short, insufficient, and altogether below the high standard set by the remainder of the work.

In the Section on Ovariotomy some very cynical remarks appear on the manufacturing of statistics—as, for instance: "An operator may put down every case that survives the operation for three days as successful." "He may call peritonitis by the name of intestinal paralysis, or obstruction, or heart failure; pyæmia he may put down as pneumonia, pleurisy, or rheumatism." "He may classify his cases in some esoteric way, so that the successful cases occur in promptly reported groups," and so on with many more hints as to the methods of manufacture which we hope are not as true as they are amusing to read of. A good index, clear type, and excellently wrought illustrations are the remaining noteworthy parts of a really valuable Gynæcology.

RECENT WORKS ON ANATOMY.

1. *Anatomy, Descriptive and Surgical.* By HENRY GRAY, F.R.S., F.R.C.S. The drawings by V. CARTER, M.D. Fourteenth Edition. Edited by T. PICKERING PICK, Surgeon to St. George's Hospital. London: Longmans, Green & Co. 1897.
2. *The Pocket Gray, or Anatomists' Vade-Mecum.* Compiled especially for Students by EDWARD COTTERELL, F.R.C.S. Eng., &c. Fifteenth thousand. London: Baillière, Tindall & Cox. 1898.
3. *Elements of the Comparative Anatomy of Vertebrates:* Adapted from the German of DR. ROBERT WIEDERSHEIM, Professor of Anatomy and Director of the Institute of Human and Comparative Anatomy in the University of Freiburg-in-Baden, by W. H. PARKER, Ph.D.; Professor of Biology at the University College of South Wales and Monmouthshire in the University of Wales. Second Edition (founded on the Third German Edition). London: Macmillan & Co. 1897. Pp. 488.
4. *Mammalian Anatomy; a Preparation for Human and Comparative Anatomy.* Part I.—The Skeleton of the Cat—its muscular attachments, growth, and variations, compared with the Skeleton of Man. By HORACE JAYNE, M.D., Ph.D.; Director of the Wistar Institute of Anatomy and Biology; Professor of Zoology in the University of Pennsylvania. London and Philadelphia: J. B. Lippincott Company. 1898. Pp. 816, with 511 Illustrations.

1. WHEN a text-book on a scientific subject like anatomy has reached its fourteenth edition, when every medical man and every medical student—perhaps we might say every professional man and student—is familiar with it, at least by name, there is very little for the reviewer to say on the appearance of a new issue, further than to record another

step in its progress, to notice any striking innovations or changes in the new edition, and perhaps to say a few words about the work generally.

We would first direct attention to the illustrations. Gray has always been famous for his numerous excellent pictures—fine, large, and well-drawn woodcuts of the old style, which unfortunately are now becoming, owing to the attendant heavy expense, less popular than they used to be. If we turn over the pages of the work before us we will find many fine examples of the style of illustration we refer to; but we regret to say that they are almost all survivals from earlier editions, for in recent years, when new illustrations have been added, the method of reproduction selected has been by process blocks, which have produced anything but satisfactory pictures in very many cases. As a result we find that several of the illustrations in recent issues do not partake of the clear, crisp character which made the work so attractive in its earlier editions. Nor must it be thought that this question of illustrations is an unimportant matter in a work on anatomy. On the contrary, it is all-important—in fact, there are those who hold that the illustrations are almost as important as the text; for in a subject like anatomy, where complicated structures and intricate arrangements have to be explained, more can be done by a good picture than by pages of description. Besides, good illustrations are also important in this—that if they are striking and well designed they leave clear mental pictures of the parts in the mind of the student, and they form the models which he is to follow in making his dissections.

It has been said by more than one writer that the illustrations of the anatomical student should be his dissections of the various parts, and not pictures drawn in books. With this opinion we have no sympathy, for many reasons, but particularly because there are hundreds of structures which the ordinary student must learn and understand in anatomy which are entirely beyond his powers and opportunities of dissecting. As every anatomist knows there are parts the anatomy of which can be displayed only by the longest and most tedious methods, which are entirely outside the province of the ordinary medical student. Besides, a part may be so dissected, even by a careful student, that it gives a wrong impression of its anatomy. For these and other reasons we consider that good illustrations are all-important in an anatomical text-book, and we regret that in the recent editions of the work before us a method of reproduction not at all in keeping with the older illustrations has been allowed to creep in.

Another remark we would make about Gray:—It is time that the histological descriptions—the account of general histology given at the beginning of the book, and the detailed histology of the various organs given under their respective heads—should be removed. For every student now-a-days learns his histology out of a special text-book on that subject; besides we have never, at least in recent years, known a student who read histology, even to a limited extent, in his Gray. The space thus secured might be devoted in part to a fuller account of embryology, and in part to the very laudable object of making the book less bulky; in fact we think a judicious pruning carried on throughout the whole book would not be without good results.

An eyesore of the most painful nature which we still find in the edition before us, as well as in its predecessors, is the scheme adopted for showing the relations of the arteries—a circle with a tabulated list of structures heaped up on each of its four sides. The plan is, we venture to say, a most objectionable and unscientific one, and utterly subversive of all true anatomical teaching. It would be an excellent method for supplying anatomical instruction to a parrot were it desirable that he should be taught to repeat by rote the relations of the blood-vessels; but students of medicine and parrots, owing to their different structural and mental characteristics, require different treatment. Besides, it is not anatomy. Who was responsible for the system originally we cannot say, but the sooner it is removed from the work the better for the reputation of Gray, and for the anatomical knowledge of the student of anatomy who adopts this as his text-book.

In the new edition before us the only striking innovation which calls specially for notice is the account of the development of the peritoneum, and the explanation of the steps by which it reaches its final arrangement, which has been taken from the American edition, and is the work of Dr. Fred. T. Brockway, of New York. Whilst we admit that the peritoneum is a most important structure, and that every student of medicine should understand its arrangement, and particularly its relations to the abdominal walls and viscera, still we think that the question of its development has been allowed to assume undue proportions in the present edition, and we fear very much that the students of Gray will be of the same opinion. A few judicious hints explaining the general lines on which the development of the membrane takes place, if tersely put, might attract his attention, but a long account, and a fairly complicated one, will, we imagine, be carefully passed over by the student, however well-intentioned.

In addition to the foregoing there are several minor changes which call for no special remark, as none of them alters in any way the general form of the work, which has become so familiar. The descriptions are practically the same—or are, at least, on the same lines—as those which have secured in the past, and will, we have no doubt, in the future secure for the book, the well-merited patronage of medical students throughout the English-speaking world.

2. On laying down the ponderous volume which we have just reviewed and taking up its "scrappy" little namesake—we shall not say descendant—which we now hold in our hand, Landseer's well-known picture, "Dignity and Impudence," was brought forcibly to our mind; for there is quite as much difference between the solid substantial fare supplied in the bulky volume of Gray's Anatomy and the scrappy rehash in the little book now before us as there is between the two representatives of the canine world in the famous picture. In fact, the difference is much greater, for there is a certain brightness and piquancy in the little dog which is entirely wanting in the corresponding book.

We have no patience with a book of its kind—a mere catalogue of anatomical facts, and an inaccurate catalogue at best, the reading of which is a waste of time, and the "making up" of which is worse than useless, for it means the getting off of a certain number of dry statements without explanations or descriptions, many of which are wanting in the important essential of accuracy. For instance, we open at random and read—"the tentorium cerebelli is placed horizontally between the cerebrum and cerebellum." Every student of anatomy who has seen a tentorium *in situ* knows that it is almost as near to the vertical as the horizontal in its tent-like slope. On the next page we open, in tabulating the relations of the submaxillary gland, we read—"Below, lies the anterior belly of digastric," nothing more or less. Again we open at random page 189 and read that the pancreas lies "in the epigastric and *both* hypochondriac regions." Again, on page 190, we look at the description of the spleen, which is a mass of inaccuracies too numerous to give in detail.

We have said enough to explain the character of the pocket Gray, which we consider a useless, injurious, and unreliable book.

3. In this work an attempt is made to set forth briefly and clearly the chief facts of vertebrate comparative anatomy, particularly in reference to the elucidation of mammalian anatomy, and of the phylogenic development of the various organs of the higher vertebrates. The book was intended originally by Professor Wiedersheim for medical as well as for zoological students; and whilst we fear that few of our medical students, with the overladen medical curriculum of the present day, will find time to read this most interesting book, we must admit that its careful study would lead to a more scientific appreciation of the facts and varieties of human anatomy than can be obtained from the ordinary anatomical courses prescribed for medical students.

The book is arranged according to organs, not according to groups of animals, and, as the preface points out, this makes it more difficult for beginners to understand, and in fact requires in the reader a fair knowledge of zoology.

The arrangement, however, commends itself to the authors, whose special desire has been to show the evolution of the organs of the body rather than of the groups of animals.

A general account of each organ is first given, including its development in the typical mammalian form; then comes a consideration of the organ in the various classes of animal, interspersed with which will be found numerous references to its morphology. In this way the following systems are treated in the order given:—Integument, skeleton, muscular system, electric organs, nervous system and sense organs, organs of nutrition, organs of respiration, organs of circulation, and urinogenital organs. The result is a very brief but careful account of the different organs in the various chief classes of vertebrates, which will be found both interesting and readable. The book is excellently illustrated, most of the pictures having been taken from Professor Wiedersheim's work. A very long bibliography—occupying some 90 out of the 488 pages of the book—is given in the appendix. The printing and general "get up" of the book are in Messrs. Macmillan's usual style; and the resulting work makes a most satisfactory scientific manual, the perusal of which we warmly commend to all interested in comparative anatomy.

4. This is an enormous volume, turned out in the best American style, fine paper, large, clear, well-spaced type, excellent binding, and over five hundred magnificent illustrations—a large number of them full-page—the whole constituting a most imposing and formidable book. However, when we turn to the contents and find that this massive volume is devoted to an account of the skeleton of the domestic cat, with brief sketches of the corresponding human structures; and when looking more closely we discover that every bone, process, and line of the skeleton of that necessary and harmless animal is treated with a minuteness and detail not surpassed in the osteological portions of the most advanced human anatomy; when, for instance, we read long columns of tables giving the length, breadth, and thickness—with various other measurements—

of twenty-five or more different examples of each bone of the cat—well, we begin to think either that American authors and publishers must be enormously wealthy, and that the cat is an object of the greatest respect and consideration in their country, or, perhaps, that the character of the work before us is but another manifestation of a well-known national trait. America has become justly famous for booming everything it can lay its hands on—why not boom the skeleton of the cat? Nothing is easier. Secure a sufficient number of the animals; chloroform, skin, and macerate them. Get a first-rate artist, and let him make five hundred beautiful illustrations twice life-size, giving every possible view of every bone and every process in the skeleton. Then take the bones one by one, examine every millimetre of their surfaces, every process, every nook and every corner, measure them in every direction, make long lists of tables, commit it all to paper in well-turned sentences, avoiding all theories and all references to the morphological value of the various parts. First-class publisher, good paper, artistic binding, and the skeleton of the cat is before you in the most approved American style.

The book is a mass of the most elaborate and detailed descriptions — nothing but pure descriptive anatomy. Even the development of the bones when that entails any specially knotty point is avoided. No homologies. No reference to morphology. But even the descriptive work is not perfect; for instance, in defining the terms used in descriptive anatomy we read, page 30, "Epiphysis is another name for end or extremity"; "apophysis is sometimes used in place of the term process." These surely are very slipshod definitions. A few pages from the above there is a diagram to explain the typical arrangement of a diarthrodial joint, which shows the synovial membrane crossing the articular cartilage. On page 244 we read that in the human temporal bone the external auditory meatus "is a funnel-shaped canal," and on page 245 we learn that the tegmen tympani forming the roof of the tympanum lies *external* to the eminence produced by the superior semi-circular canal. And so on.

There are two good things in the book—the illustrations, some of which, particularly those of the skull, are beautiful; and a short sketch on the evolution of the mammalian cheek teeth, which is taken from Professor Cope's work.

Before concluding it is but right to mention the author's object in writing the treatise, of which this is the first volume. This object, we learn from the preface, was "that the study of anatomy might be more generally encouraged and disseminated through our higher schools and colleges; and a student, even a very young student, boy or girl, working alone, perhaps at home, might be enabled to master unaided essential facts without laboratory facilities and remote from the repulsiveness of the dissecting-room." This, the reader will observe, the young person was to do with the aid of a text-book the first part of which runs to over 800 pages! The book is also offered as a means of laying a sound foundation for the study of human anatomy, which, to say the least of it, is ridiculous. What advantage does the intimate study of the skeleton of the cat, without reference to general morphology, confer on the student of human anatomy that he will not derive from his course of study of human anatomy itself? The true foundation for the study of the human anatomist is not to be found in the detailed account of the descriptive anatomy of one particular animal, but in a study of the facts of vertebrate anatomy in all its bearings and connections, from amphioxus to man.

The British Pharmacopœia. Published under the direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to the Acts XXI. and XXII. Victoria, cap. 90 (1858), and XXV. and XXVI. Victoria, cap. 91 (1862). London: Printed and published for the Medical Council by Spottiswoode & Co. 1898. 8vo. Pp. 535.

THE British Pharmacopœia, 1898, by authority, has a collateral descent from the first work of the kind published by authority in Nuremberg in the year 1542, written by Valerius Cordus.

The first Pharmacopœia in London was published by the London College of Physicians in the year 1618; it was principally derived from the works of Cordus and his followers. Eleven successive editions of this work appeared up to the year 1858. The Edinburgh Pharmacopœia was first edited in 1699, while that of Dublin dates from 1807.

Until the Medical Act passed in 1858 the right of publishing Pharmacopœias for England, Scotland, and Ireland was vested in the Colleges of Physicians of London, Edinburgh, and Dublin, and as these books contained several preparations similar in name, but different in strength and poisonous in their nature, dangerous complications arose from a London prescription being made up in Edinburgh or London, or *vice versâ*. By this Act of 1858 it was ordained that the General Medical Council shall cause to be published, under their direction, a book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, and containing such other matter and things as the General Council think fit, and to be called the British Pharmacopœia; and by a subsequent Act it was enacted "that the British Pharmacopœia shall be for all purposes deemed to be substituted throughout Great Britain and Ireland for the several above-mentioned Pharmacopœias."

Since then editions have appeared—in 1864, amended in 1867; a reprint, with additions, in 1874; another edition was published in 1885, and a supplement to it in 1890.

It is to be hoped that in the future an International Pharmacopœia, with a ten years' review, may replace the Pharmacopœia of 1898, which is now being handed over to the criticism of medical and pharmaceutical practice.

Of the 535 pages of which this volume consists the Index occupies 90, the eleven Appendices occupy 50 pages, the Pharmacopœia proper 395 pages, the Preface 32 pages.

With a view of an Imperial Pharmacopœia the Council has in contemplation an addendum, in which medicinal plants and other substances suggested for inclusion by Indian and Colonial authorities will be dealt with more fully. No descriptions of plants are given in the text of the present issue.

The preparation of official articles after the paragraph on the article is omitted, but in all important cases are given in the index. There are some changes in nomenclature—*e.g.*, hydroxide for hydrate, &c.

With regard to weights and measures no alteration has been made. The alternative adoption of the metric system of weights and measures, formerly allowed in the paragraph referring to volumetric analysis, is now extended to every official paragraph which makes reference to the usual imperial weights and measures; but the metric system alone is employed in all paragraphs relating to analysis, whether gravimetric or volumetric.

Paragraphs descriptive of preparations and tests for chemical substances have been omitted, as far as the requirements of the Medical Act of 1858 will allow, the literature of chemical technology being now so accessible; so also with ordinary qualitative tests for acids and bases of radicles.

Constitutional formulæ have been substituted for empirical in the case of organic chemical substances.

As regards alcoholic menstrua, ethyl hydroxide (C_2H_5OH) is always referred to under that name alone. Alcohol absolute is the name given to a mixture containing not more than 1 per cent. water. Alcohol (90 per cent.) is the name given to a 90 per cent. solution of ethyl hydroxide in water; it is nearly identical with the rectified spirit of the B. P. of 1885.

The essences have been termed spirits. In dealing with the tinctures two chief objects have been kept in view—1. To arrange for greater uniformity of dose; 2. To select for each tincture the menstruum that is best adapted to extract the active constituent of the drug. There are five solutions of ethyl hydroxide used for these purposes—90 per cent., 70 per cent., 60 per cent., 45 per cent., and 20 per cent.

The standardisation of preparations has been improved. Tr. belladonnæ has been added to this most important list. Nine liquores concentrati have, after laborious and patient experiment and discussion, become official. Most of the liquid extracts are of such strength that one fluid ounce represents one ounce by weight of the drug.

The doses in the Pharmacopœia are intended to represent the average range in ordinary cases for adults. They are meant for general guidance, but are not authoritatively enjoined by the Council.

The medical practitioner must act on *his own* responsibility as to the doses of any therapeutic agent which he may administer. Modern methods, or improved methods for easy administration of medicine, have not been described, but their uses must be left to the direction of the practitioner.

With reference to the present edition of the Pharmacopœia, assistance was rendered by a Committee of the Pharmaceutical Society of Great Britain. (We regret that neither the Society of Ireland nor that of Scotland was represented.) The following gave highly valuable assistance:—

J. Emerson Reynolds, F.R.S.
T. E. Thorpe, F.R.S. (in Chemistry).
W. A. Tilden, F.R.S.
W. T. Thiselton-Dyer, F.R.S. (in Botany).
E. Morell Holmes (in Botany).
T. Lauder Brunton, F.R.S. (in Pharmacy and Therapeutics).
Walter G. Smith, M.D. (in Pharmacy and Therapeutics).
Ralph Stockman, M.D.

Dr. Attfield edited the work, and Dr. Nestor Tirard acted as Secretary to the Committee, which consisted of:—Sir R. Quain, Bart., Chairman; Dr. L. Atthill, Mr. Brudenell Carter, Sir Dyce Duckworth, Dr. Leech, Dr. MacAlister, Dr. M'Vail, Mr. C. Tichborne, Sir John Batty Tuke. There are six lists following the Preface. The first contains the articles included in the edition of 1898, which were not in that of 1885 or in the addendum of 1890. These are in number 67. The second contains the articles included in the Pharmacopœia of 1885–90, but which are omitted in the British Pharmacopœia of 1898. These are in number 188. We observe with some satisfaction that the official armoury has been relieved of 121 articles. The third contains a list of articles and preparations the names of which have been altered, in double column, in number 58. The fourth contains a list of preparations existing in the previous edition, but whose composition has been altered; 56 in number. Bases of ointments and of lozenges are altered and given in addition. The fifth list contains the preparations the strength of which has been altered, in number 94, and including:—

Aqua chloroformi.
Ext. belladonnæ alcoholicum.
  ,, nucis vomicæ.
  ,, opii liquidum.
Infus. ergotæ.
Injectio apomorphinæ hypodermica.
  ,, morphinæ ,,
Liq. epispasticus.
Pilula phosphori.
Suppositoria morphinæ.
Tinct. aconiti.
  ,, belladonnæ.
  ,, chloroformi et morphinæ.
  ,, colchici sem.
  ,, conii.
  ,, gelsemii.
  ,, lobeliæ ætherea.
  ,, nucis vomicæ.
  ,, stramonii.
  ,, strophanthi.
Unguentum acidi carbolici.
  ,, ,, salicylici.

This list is, perhaps, of most importance to the medical practitioner in its practical bearing on every-day work.

The sixth list consists of 11 articles transferred from the text to an appendix.

APPENDICES.

I. Articles employed in chemical testing.
II. Test solutions.
III. Tests for substances mentioned in B. P.
IV. Test solutions for volumetric estimations, including indicators.

V. Names, symbols, &c., of elementary bodies mentioned.
VI. Thermometric memoranda.
VII. Weights and measures, with tables of relations.
VIII. Processes of percolation and maceration for tinctures.
IX. Bases for the preparation of lozenges.
X. List of books referred to, containing plates of official plants.
XI. Alternative preparations sanctioned for use in India and the Colonies.

We notice in this volume not by any means the perfection of a Utopian standard for pharmacy, but an honest, earnest, and developing standard; and we may hope that before many years a standard of Imperial unity may be reached, which, jointly including the United States of America, will be the forerunner of the International Volume that will bind the human race together in one common tie.

NINIAN FALKINER.

GRAVES'S DISEASE TREATED BY SECTION OF THE CERVICAL SYMPATHETIC.

AT the meeting of the Academy of Medicine of Paris, on the 19th of April, MM. Combemale and Gaucher (*Gazette des Hôpitaux*) pointed out that section of the sympathetic nerve in the neck in a case of Graves's disease caused the disappearance of the exophthalmos and of the tachycardia. The result of the section in a case in which the operation was done was the disappearance in a few hours of the exophthalmos, and after a few days of the tachycardia, and the painful feeling in the præcordium. On the size of the goître no effect was produced. The authors consider that the section of the nerves does not effect the normal secretion of the gland, but that it stops the production of a toxin, to which product they ascribe the symptoms which are characteristic of the disease.

WARM BATHS IN PULMONARY AFFECTIONS.

M. LEOMINE, of Lille (*Revue de Therapeutique*), again reports the excellent results he has obtained by the use of warm baths in acute bronchitis, capillary bronchitis, and broncho-pneumonia of childhood. The number of the baths is proportionate to the severity of the attack.

PART III.

MEDICAL MISCELLANY.

◆

Reports, Transactions, and Scientific Intelligence.

◆

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—**Edward H. Bennett**, M.D., F.R.C.S.I.
General Secretary—**John B. Story**, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—**Sir William Thomson**, President of the Royal College of Surgeons in Ireland.
Sectional Secretary—**John Lentaigne**, F.R.C.S.I.

Friday, March 4, 1898.

The **President** in the Chair.

Gunshot Fracture of the Humerus.

Mr. M'Ardle brought forward a case of the above. [It will be found described in Vol. CIV., p. 198].

The President, in the course of some remarks, said that in dealing with recent simple fractures by operative methods he would certainly be in favour of such proceeding in cases where the deformity was likely to be very great, or where the use of the limb was likely to be interfered with. He thought it would be perfectly justifiable to cut down on such fractures, and suture them in proper position.

Mr. Tobin thought that the discovery of the X-rays would compel surgeons to be very careful in their setting of fractures. He thought that they would yet be compelled to cut down upon ordinary simple fractures, and unite them by wire suture in a position that would do them credit.

Mr. T. Myles said with regard to the question of exposing the broken ends of bone, and keeping them in position by means of wire therein, he thought, lay a possibility of error. There was no method, he said, yet devised for keeping the broken ends of a bone in position where the deformity was due to muscular action. The wiring produced limitation of movement, but would not bring the fragments well together. When a fracture was cut down upon there was no guarantee that the angular deformity was corrected, and if wiring were carried out, even then there was no guarantee that union would take place. In an ordinary fracture—say of the leg—he maintained that although the fragments did overlap slightly, for practical purposes it was just as good a leg, and was able to perform all the functions of a leg.

Mr. G. J. Johnston agreed with Mr. M'Ardle in his preliminary treatment of fractures—that was, very rigorous antiseptic treatment, and also as regards chloroform. What was his opinion regarding Mr. Arbuthnot Lane's treatment of wiring fractures? Mr. Lane seemed to recommend, not wire suturing, but screwing the bones together, which he (Mr. Johnston) thought got out of the difficulty as regards subsequent displacement. He (Mr. Johnston) thought the treatment very good for oblique fractures.

Mr. E. H. Bennett thought that all surgeons who abstained from the use of anæsthetics in the immediate treatment of fractures were well advised. A fracture was reduced with the greatest ease under the anæsthetic; but as the patient comes out of the anæsthetic he struggles just as badly as when going under, especially when the patient had received a recent injury. He related a case where the olecranon was exposed and united by thick silver sutures, but the patient, on coming out of the anæsthetic, burst everything with a movement of the arm.

Mr. Lentaigne related a case of rupture of the extensor muscle of the thigh, where the patient burst the sutures on coming out of the anæsthetic. A second attempt was successful. Much was learned from skiagraphs taken before and after the setting of a fracture. He took it for granted that gunshot fractures should be treated the same as other compound fractures. It was his custom to inject the cavity of the wound with one in twenty carbolic lotion. Afterwards he used sterilised water to wash away the strong poisonous antiseptic introduced; then, a thing which he considered most important, he put the patient up in plaster of Paris, whether compound or simple. In the case of a compound fracture he cut a fenestrum through the plaster immediately, and then cut one through the antiseptic dressings, and got down to the wound; a tampon of gauze was a most essential thing. The use of plaster of Paris absolutely prevented any possibility of injury when the patient was recovering from an anæsthetic. He thought that even formerly it would have been wrong to amputate in Mr. M'Ardle's case, seeing that the artery was untouched. It might have been a different thing if the nerves were destroyed.

Mr. M'Ardle, in reply, said it was sixteen years since he had screwed bone in a case of ununited fracture of the collar-bone. He then utilised two varieties of screw. He now adopted the wire suture always, and had fixed bone with such means even in very strong patients. There was no muscle which could not be temporarily paralysed. For instance, in the leg, if one wished to keep the bone in place, the tendo-Achillis must be cut. In the thigh the hamstring muscles must be cut, and there was no subsequent trouble whatever. In answer to Mr. Johnston, for all bones that overlapped he thought that the screw was preferable where the fracture was oblique. Such, of course, could not be carried out in the case of transverse fractures. As regards Mr. Bennett's remarks about the struggling of a patient after operation, he (Mr. M'Ardle), after having the patient thoroughly dressed, applied a splint that prevented the action of the intolerant muscles, or he cut through the tendon that was likely to do harm. For instance, in wiring the olecranon he cut the more important fibres of the triceps muscle. This did not interfere with the subsequent usefulness of the arm. The struggling was easily prevented by a preliminary hypodermic injection of morphin, which would begin to act by the time that the operation was over. He thought that raising the heel and flexing the thigh on the abdomen would have prevented the rupture of the extensor of the thigh in Mr. Lentaigne's case.

Surgical Treatment of Tuberculous Disease of the Hip.

Mr. Tobin referred to a case, just shown to the Academy, of tuberculous disease of hip in an early stage, treated by osteotomy of the femur, passing obliquely from the lower border of the great trochanter to the lesser trochanter; and to five other cases, most of which had also been shown to the Academy, and which constituted all the cases operated on in this way. Mr. Tobin claimed for them that in every instance—1st, complete union of the fracture had taken place within six weeks; 2nd, the progress of the disease had been quickly arrested, as instanced by the subsidence of swelling and the non-formation of abscess; 3rd, in three of the cases after six months, and two after nine months, the patients were able to walk long distances without support and with only a slight limp, and showed no tendency to relapse. The sixth case, which had been operated on only six weeks before, was going about wearing a Thomas' splint.

Contrasting the plan of treatment employed, and which had been described in the *British Medical Journal*, April 14, 1897, with the ordinary method of extension by weight and pulley, he said of the latter—It is generally assumed, but perhaps incorrectly, that extension by a weight and pulley means complete rest. That in many cases it means relief from pain we know, but even in such cases does it mean rest? Does it mean rest for the ligaments and capsule that are drawn on? Does it favour the absorption of fluid or the various processes by which nature effects a cure? Take, for instance, adhesions—does it favour them? There is no one who will not acknowledge that adhesions are often salutary. They limit inflammatory processes, they encapsule irritants, they give fixation to weak parts requiring it. For the plan of putting the limb into good position by an osteotomy, he claimed—1st, that, while straightening the leg without delay, it allowed the component parts of the joint to be at once at ease, and freed from the drag and worry of a flexed limb seeking rest; 2nd, it introduced on the scene a beneficent factor. Incidents as thick as blackberries could, if necessary, be gathered to prove that, consequent on the division of a bone, there occurs in the neighbourhood an alteration of its economy that has, as a rule, a salutary effect on tuberculous and chronic inflammations. What this alteration is it is hard to say; some say drainage. The explanation that occurred to him would be rather something of this sort—under ordinary circumstances there is in tuberculous bone little or no tendency to bony reparation. One sees no osteophytes thrown out, or other indication of reactive vitality. Resection of bone excites this vitality. It calls upon it to put forth its whole strength for the repair of the injury. There is a new *régime* to which the tuberculous process has to yield. In examining a specimen of recently-united fracture in any bone one sees a sclerosed area extending well beyond the scene of injury. Now, since this sclerosis is the very reverse of the condition one meets with in spreading tuberculous disease, may one not find in it some explanation of the cures that are wrought? Anyhow, whatever the explanation, the factor is there, and the osteotomy under consideration gives a large number of hip cases the benefit of it, since most observers are in agreement that in the hip the usual situation of the primary trouble is at the lower part of the neck of the femur, just outside the epiphysial cartilage. As regards treatment, when the patient is allowed up he holds by a Thomas' splint, which is easily fitted to a straight limb.

Mr. T. Myles was afraid that he could not go with Mr. Tobin in his hopes regarding his treatment. The conversion of a disease of the hip-joint with tubercle into a compound fracture, without any attempt to eradicate the tuberculous focus, seemed to him to be very bad. He recently tried an osteotomy in a case of ankylosis immediately below the great trochanter with a fatal result. When the femur is divided at the trochanter, and the lower segment of the limb brought down to its normal position, there must be a great pressure exerted on the tissues in front of the upper segment, causing awful pain. He had operated on a case, and had no hesitation in saying that death was caused by the awful pain subsequent to the operation. If the deformity in the early stage of the disease happened to be rigid, any attempt to produce the position advocated by Mr. Tobin would, he was afraid, produce a result similar to that he had described. He thought that Mr. Tobin was wrong in assuming that when he had divided the neck of the femur and put the rest of the limb straight, he had left the upper segment intact. From his own early experience he was convinced that excision of the hip was hopeless in the late stages. He had opened a good many hips in the early stages, and never found much fluid in the joint, and was convinced that, whatever be the deformity, it was not due to distension of the joint with fluid. He thought that the deformity was caused by the mechanical preponderance of the muscles in front overcoming the muscles behind. He agreed with Mr. Tobin on operative interference on the bone, and thought that Sir Thornley Stoker's and Sir William Stokes' method of trephining the great trochanter gave the best promise of a successful issue. He believed that in nine cases out of ten rest and gradual treatment with the pulley, and afterwards with a Thomas' splint, would end with a useful limb. Trephining of the great trochanter might be recommended in more obstinate cases.

Mr. Lentaigne said he had performed excision of the hip pretty often of late, and, with two exceptions, had had favourable results. He thought that Mr. Tobin's method was a very bold procedure. He had seen two or three of his recent cases, and thought it was a question altogether of how those cases would get on during the next year or so. If the patients were then in good health comparatively, and if the hip disease had disappeared, he said that there was a future for the operation, which was a simple and an easy one.

Mr. M'Ardle said that he had seen Mr. Tobin's results, and thought them more remediable than his own. He thought Mr. Tobin's procedure one which was well worthy of being carried out.

In the replacement of the limb he had not observed that there was any difficulty such as that experienced by Mr. Myles. There was a quietude obtained for the patient after the operation, such as was obtained by no other method.

Mr. T. E. Gordon said that Mr. Tobin's statement that extension of the limb caused stretching of the ligaments of the joint was surely contrary to the general pathological teaching in connection with the surgery of joints. In order to cause stretching of the ligaments, one would have to cause separation of the bones. He had seen experiments made to try what weight was required to effect separation of the bones, and it was something enormous. It was, therefore, impossible that the ordinary extension could cause any stretching of the ligaments of the joint.

Mr. Tobin, replying, said he had not such fear of producing compound fracture as Mr. Myles had. Did Mr. Myles mean to maintain that every time the limb was being straightened death was the result? Regarding his statement that the lower end of the upper fragment must be pressed down by the tissues, and that he (Mr. Tobin) did not get the result he hoped, the result showed that the upper fragment was united to the lower by an oblique angle, and the photograph of the limb before the setting right of the condition showed clearly that the angle which the upper fragment retained was exactly the angle prior to the operation. He again remarked that, whatever the cause of the displacement in a case in which distension of the joint existed, straightening would increase the tension and cause harm. Regarding Mr. Gordon's remarks, he (Mr. Tobin) said he had noticed that a weight applied for a short time produced no result; but the continual application caused much extension. Also, when the muscles were tired the weight must pull on the ligaments and capsule, and diseased tissues around the joint, and by so doing it did not create for the diseased parts a position of ease.

The Section then adjourned.

SECTION OF MEDICINE.

President—Sir **George F. Duffey**, M.D., President of the Royal College of Physicians of Ireland.

Sectional Secretary—**R. Travers Smith**, M.D.

Friday, March 11, 1898.

The **President** in the Chair.

A Case of Pneumothorax.

Dr. Finny communicated a case of idiopathic pneumothorax. [It will be found in Vol. CV., p. 273.]

Dr. A. R. Parsons said Dr. Finny had taken away the explanation of metallic tinkling as it was usually taught. What was his explanation for it? Did he not think it just possible that there might have been a small amount of fluid in the pleural cavity sufficient not to be detected by physical signs, but sufficient to cause the metallic tinkling on the old hypothesis?

Dr. Knott said it occurred to him if there was an opening into a cavity containing air, and there was some moisture in the opening, that during inspiratory efforts a little drop of moisture might be drawn in to create metallic tinkling.

Dr. R. Travers Smith, referring to the diagnosis of effusion complicating cases of pneumothorax, said that Sir Douglas Powell pointed out that it was not quite so easy to exclude effusion into the pleural cavity in cases of pneumothorax because the suction action of the negative pressure in the interior of the thorax helped in sustaining the diaphragm in its dome-shaped position. In pneumothorax the negative pressure in the pleura ceased to exist, and the suction action on the diaphragm was lost, and a more or less crater-shaped sinking occurred at the top of the dome in which fluid might lodge, and so might escape detection from percussion, but this, Dr. Finny could say, would not prevent the occurrence of hippocratic succussion, which was not found in his case.

Professor E. H. Bennett was glad to hear Dr. Finny uphold the practice of avoiding surgical interference in such cases as far as possible. He had seen many cases of pneumothorax, but only one which called for puncture of the thorax. In this one exception the patient, a man with a fractured rib, began to develop general emphysema, and after a short time, for some unknown reason, the emphysema stopped developing, and the pleura began to fill with such a degree of tension that the man began to be strangled. A puncture was made with small trochar and canula, and the air rushed out with great speed. Complete relief followed without any complication.

Dr. Finny, in reply, said that he did not know that he was obliged to give an explanation of what had occurred in his case, because he did not believe that the explanation of the metallic tinkling was due to a drop of water falling down or a bubble breaking on the surface; but it was quite possible that it might have been a mucous bubble in the tube, and not one blown out through a hole in the lung; that in some of the bronchial tubes there might have been a little draught of air, and some bubble might have been present there, and given rise to the metallic tinkling. In the neighbourhood of a large chamber any sound would get a metallic ring; therefore it was possible that there might have been some slight bubbles in the deeper tubes giving rise to the metallic tinkling. As to Dr. Parsons' question about the production of the friction sound when there was no fluid or pleurisy—well, he (Dr. Finny) did not say there was no pleurisy, but it was quite possible to have a little slight lymphy exudation on the surface without a quantity of fluid in the lower part of the chest, and although Dr. Smith had referred to the possibility of not finding fluid in the lower part of the chest on account of the shape of the diaphragm, he thought there was hardly enough fluid even there to explain the occurrence of the metallic tinkling. No succussion could be detected on careful examination. Dr. Bennett had touched upon a very important surgical question. He (Dr. Finny) thought it right to say that Dr. West referred with great credit to the early operation on pneumothorax as being the means of saving so many lives.

Case of Cystinuria.

Dr. Walter Smith drew attention to three curious perversions of metabolism :—

(*a*) Alkaptonuria; due either to presence of pyrocatechin, urolencic acid, or homogentisic acid.

(*b*) Diaminuria—*i.e.*, the occurrence of diamines (cadaverin; putrescin) in fæces and urine.

(*c*) Cystinuria.

Few cases of cystinuria are upon record, probably not more than 75 in all, since the first recognition of cystin by Wollaston, nearly 90 years ago. Two cases have come under Dr. Smith's observation—viz., in 1890 and 1897.

The first case (already published) occurred in a boy, aged eight years, in good health. The odour of the urine was fragrant; reaction faintly alkaline; sediment slate-coloured. Cystin crystals were found rather sparingly in this deposit, associated with phosphatic crystals and $CaCO_3$.

The second case was that of a lady, aged about fifty years, who consulted Dr. Smith for rheumatic pains. The urine was faintly acid, and the white sediment consisted almost wholly of cystin, in elegant hexagonal crystals, insoluble in acetic acid, and soluble in ammonia. The true formula of cystin is $(C_3H_6NSO_2)_2$. It has no relation to uric acid. The probable antecedent of cystin in the body is cysteïn, a soluble base. Cystinuria is frequently associated with diaminuria, and both are possibly due to a common cause—viz., an intestinal mycosis. Hence the therapeutical indication is to disinfect the intestine.

Mr. M'Causland, referring to the connection between cystinuria and diaminuria, asked if Dr. Smith meant to say that in people suffering from ptomaïn poisoning cystin is found in the urine? Was it not possible that cystinuria was more common than supposed on account of the possibility of its being overlooked? Dr. Smith said that cystinuria had nothing to do with rheumatism. In Dr. Smith's second case the lady suffered from rheumatic pains; had that nothing to do with the case?

Dr. J. W. Moore said he possessed records of about 2,500 analyses of urine by his father, who recorded two cases of cystinuria. Since his father's death in 1871 Dr. Moore had seen two cases himself. About a year ago Dr. Craig had a very interesting case, in which the hexagonal crystals were beautifully seen; so that altogether out of about 3,700 examinations of urine there were about five cases.

Dr. E. H. Bennett said that he had many years ago determined a deposit of crystals in a specimen of urine to be cystin, on account of his having obtained the same results on chemical treatment as he had obtained in the case of a calculus which he knew to be composed of cystin.

Dr. W. G. Smith, in reply to Mr. M'Causland, said that the word ptomaïn had a very wide significance. The word diaminuria was only a particular case of ptomaïn, and, therefore, cystinuria could not always be expected to be associated with diaminuria, inasmuch as it was only proved to be associated with diamines, of which the names are cadaverin and putrescin. Cystinuria was, therefore, associated with particular species of ptomaïns, but not ptomaïns in the general sense. With regard to the frequency of its occurrence, they had already heard Dr. Moore's and Dr. Bennett's remarks. Many years ago Golding Bird expressed the conviction that in the urine, in many cases of depressed health, it was not a very uncommon thing to meet with crystals of cystin. He would lay no stress on the occurrence of rheumatism and cystinuria together in the case of his second patient—an old lady—as rheumatism in old ladies was very common and cystinuria very rare.

Acromegaly.

DR. W. J. THOMPSON read notes of a case of this disease, and exhibited patient. He said—Since Marie in 1886 first described acromegaly little advance has been made as to its cause. It occurs more frequently in females than males, and in the former is associated with menstrual disturbance. It follows anæmia, influenza, the exanthemata, rheumatism, syphilis, and traumatism; it frequently comes on without any cause, and occurs at all ages from 14 months to 70 years. The symptoms are now well known—viz., hypertrophy of the bones of the hands, feet, and lower part of extremities, the cranial and facial bones, with subcutaneous thickening, kyphosis of spine, enlargement of nose, ears and lips, and optic disturbance.

The pathology of acromegaly is still obscure. The enlargement of the bones is simply hypertrophy. What is the hypertrophy due to—a toxin or a neurosis? The thyroid gland is often hypertrophied, rarely the thymus. The pituary is constantly found affected—in about 90 per cent. of all cases enlarged and diseased, and in about 10 per cent. diseased but atrophied. The diseases embraced almost every form of tumour—viz., sarcoma, adenoma, glioma, &c.; hence, from the lesions of this body very little light is thrown on this disease. Similar changes are found in pituary bodies not clinically associated with acromegaly. The diseases it is likely to be confounded with are—(1) myxœdema; (2) osteitis deformans of Paget; and (3) hypertrophic pulmonary osteo-arthropathy. It runs a course of from 2 or 3 to 30 years, and is divided into the acute, the chronic, and the intermediate. Treatment unsatisfactory. Arsenic, iron, pituary and thyroid extracts, &c.—nothing seems to have any specific effect.

CASE.—E. D., aged nineteen years, admitted to Jervis-street Hospital November 29th, 1897. Both parents living and healthy; has six brothers and one sister, all strong. One sister died from operation on knee-joint—probably tubercular. She enjoyed good health until fifteen, when she had a severe attack of influenza, but recovered without any complication. Her menses appeared about this time, and remained normal for two years, when they stopped, and have not since appeared. At the time they stopped she was anæmic, but anæmia disappeared under suitable treatment. About 12 months ago felt an uneasiness—not pain—in hands and feet, and noticed for first time that they were swollen. Since that time the swelling has got worse, and extended to joints and lower parts of extremities. Her voice has been getting thicker, and for the past three months her spine getting curved. Her appetite throughout has been good.

Condition on admission—Medium height, well nourished, dark complexion, rather apathetic aspect; well-marked spinal curvature. Bones of lower third of forearms, wrist-joints, and hands enlarged, and subcutaneous tissue thickened; nails broad, smooth, and convex. Lower half of tibia and fibula very much hypertrophied; bones of ankle-joint and feet not so much enlarged. The kyphosis prominent in dorsal region. Bones of head and face slightly enlarged, also nose, lips, and ears. The inferior maxillary bones not very prominent, as is usual. Tongue and eyebrows normal. The thyroid gland decreased in size. Heart, lungs, and abdominal viscera normal and healthy. No loss of sensation, of taste, or smell. No elevation of temperature, and skin acts very freely. Her sight practically normal, and genital organs small—in fact, infantile. Urine not affected.

Since admission has had attacks of headache, lassitude, pains in extremities, with feeling of swelling; no pyrexia, and has been obliged to remain in bed. These attacks lasted two or three days, but swelling remained. She stated this is how enlargement takes place, not slowly and imperceptibly. The interval between attacks may be two or three weeks.

The treatment has been thyroid extract for some time past, but case steadily getting worse.

The points of interest about her case are:—(1) Short duration, and coming on quickly and without any cause. (2) The bones of the lower part of the extremities are more hypertrophied than those of the hands and feet. (3) The atrophy of the genital organs, and the well-marked kyphosis. (4) No great defect of vision. (5) No great enlargement of the bones of the head and face, and no enlargement of the tongue and eyebrows.

Mr. M'Causland asked what conditions Dr. Thompson and Dr. Bewley considered as being typical of this disease. Not long ago he had under his care a patient with a large cystic tumour under the jaw, which was removed. The patient presented certain conditions, apparently very like those of acromegaly. There was great enlargement of the hands, feet, head, and bones of face, hoarseness of voice, but no headaches or pains. Eyes, thyroid, and urine normal. Dr. Thompson's case did not at all come up to his ideas of what acromegaly should be. For himself, he did not offer any suggestion, except that the girl might be suffering from some form of tuberculosis or rheumatism. As to Dr. Bewley's case, he (Dr. Bewley) seemed to think that the fact of the man being what was commonly termed "undershot" was a symptom of acromegaly.

Dr. Thompson, in reply, thought that the symptoms described by Mr. M'Causland would fit in with the usual symptoms of the disease. He did not say that kyphosis was present. He (Dr. Thompson) did not think it was tubercular disease, as the girl had been suffering for a year and a half, and some symptoms would have developed. He did not think it was rheumatism, as there would likely have been some pyrexia and pain.

Dr. H. T. Bewley said it was really very hard to say what were the typical signs of acromegaly. The symptoms in his case fitted in with the usually-described symptoms. Marie, however, mentioned that such cases were not acromegaly unless there were eye symptoms, which were absent in his case.

The Section then adjourned.

ILIAC PERFORATION IN A CHILD.

M. Kirmisson, at a meeting of the Surgical Society of Paris (*La Presse Médicale*), reports a case of peritonitis in a child of eight years of age. An examination under chloroform demonstrated a localised collection of fluid. He performed a laparatomy and found a perforation in a knuckle of the ileum, which he sutured. The child made a good recovery. In this case there were no symptoms of a perforation, and M. Kirmisson was led to examine the intestines in seeking a cause for the peritonitis.

EXTREME COLD IN THE TREATMENT OF TUBERCULOSIS.

Seeing the good effects obtained by M. Pictet by the use of ice chambers in the treatment of dyspepsia, MM. Letulle and Ribard were induced to try the same method in treating the dyspepsia of phthisical patients. They consider that cold rays penetrate the body just as X-rays and arrest pyrexial changes. Beneficial results are reported. MM. Chassep and Cardes have recorded ninety-six cases in which the anorexia was markedly diminished. The exposure to the cold should not exceed ten minutes at a time.—*La Presse Médicale.*

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four weeks ending Saturday, May 21, 1898.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Average Rate for 4 weeks	Towns	Weeks ending				Average Rate for 4 weeks
	April 30	May 7	May 14	May 21			April 30	May 7	May 14	May 21	
23 Town Districts	24·7	25·6	22·4	23·6	24·1	Limerick -	26·7	33·7	22·5	33·7	29·1
Armagh -	28·5	28·5	49·9	21·4	32·1	Lisburn -	4·3	8·5	12·8	12·8	9·6
Ballymena	33·8	11·3	11·3	11·3	16·9	Londonderry	18·8	15·7	22·0	26·7	20·8
Belfast -	25·8	28·1	23·8	25·0	25·7	Lurgan -	4·6	36·5	22·8	9·1	18·3
Carrickfergus	17·5	5·8	11·7	5·8	10·2	Newry -	12·1	28·2	28·2	8·1	19·2
Clonmel -	19·5	29·2	24·3	34·1	26·8	Newtownards	45·4	39·7	28·3	11·3	31·2
Cork -	29·1	31·8	24·2	20·1	26·3	Portadown	18·6	6·2	30·9	30·9	21·7
Drogheda -	7·6	34·2	7·6	11·4	15·2	Queenstown	23·0	23·0	23·0	40·2	27·3
Dublin -	24·9	23·1	21·3	23·4	23·2	Sligo -	25·4	15·2	25·4	35·5	25·4
Dundalk -	12·6	8·4	20·9	12·6	13·6	Tralee -	50·4	28·0	33·6	16·8	32·2
Galway -	37·8	22·7	11·3	34·0	26·4	Waterford	19·9	35·8	17·9	33·8	26·8
Kilkenny -	33·0	37·8	28·3	18·9	29·5	Wexford -	18·1	9·0	22·6	18·1	17·0

In the week ending Saturday, April 30, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 17·2), was equal to an average annual death-rate of 18·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·8 per 1,000. In Glasgow the rate was 22·3. In Edinburgh it was 17·2.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 24·7 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in fifteen of the districts to 11·3 in Ballymena—the 6 deaths from all causes registered in that district comprising 2 from diphtheria. Among the 151 deaths from all causes registered in Belfast are 6 from measles, 1 from scarlatina, 2 from whooping-cough, 2 from diphtheria, 7 from enteric fever, and 6 from diarrhœa. The 42 deaths in Cork comprise 2 from diarrhœa, and the 5 deaths in Sligo comprise one from measles and one from diarrhœa.

In the Dublin Registration District the registered births amounted to 226—112 boys and 114 girls; and the registered deaths to 170—80 males and 90 females.

The deaths, which are 18 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·4 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 24·9 per 1,000. During the first seventeen weeks of the current year the death-rate averaged 30·7, and was 0·9 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 18, being 3 below the average for the corresponding week of the last ten years, and 7 under the number for the previous week. The 18 deaths comprise 1 from scarlet fever (scarlatina), 5 from influenza and its complications, 3 from whooping-cough, 2 from diphtheria, 2 from enteric fever, and 1 from diarrhœa.

The weekly number of cases of scarlatina admitted to hospital, which had risen from 22 in the week ended April 16th to 30 in the following week, fell to 13. Twenty-one scarlatina patients were discharged, 1 died, and 174 remained under treatment on Saturday, being 9 under the number in hospital on that day week. There were also 17 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Seventeen cases of enteric fever were admitted to hospital against 16 in the preceding week. Sixteen patients were discharged, one died, and 88 remained under treatment on Saturday, being equal to the number in hospital on that day week.

Six cases of measles were admitted to hospital. Thirteen cases of the disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which in each of the two weeks preceding numbered 32, fell to 24, or 15 below the average for the corresponding week of the last ten years. The 24 deaths consist of 20 from bronchitis and 4 from pneumonia.

In the week ending Saturday, May 7, the mortality in thirty-three large English towns, including London (in which the rate was 16·9), was equal to an average annual death-rate of 17·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·7 per 1,000. In Glasgow the rate was 22·8, and in Edinburgh it was 20·4.

The average annual death-rate in the twenty-three principal town districts of Ireland was 25·6 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in sixteen of the districts to 5·1 in Sligo—the 3 deaths from all causes registered in that district, comprising one from diarrhœa. Among the 164 deaths from all causes registered in Belfast are one from measles, 2 from scarlatina, 4 from whooping-cough, 2 from diphtheria, 4 from enteric fever, and 3 from diarrhœa. The 10 deaths in Londonderry comprise 3 from whooping-cough, and the 18 deaths in Waterford comprise one from simple continued fever and one from diarrhœa.

In the Dublin Registration District the registered births amounted to 215—121 boys and 94 girls; and the registered deaths to 164—72 males and 92 females.

The deaths, which are 14 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·5 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the district, the rate was 23·1 per 1,000. During the eighteen weeks ending with Saturday, May 7, the death-rate averaged 30·4, and was 0·9 under the mean rate in the corresponding period of the ten years 1888–1897.

Only 16 deaths from zymotic diseases were registered, being 8 below the average for the corresponding week of the last ten years, and 2 under the number for the previous week. They comprise one from scarlet fever (scarlatina), 4 from influenza and its complications, 3 from whooping-cough, one from diphtheria, 3 from enteric fever, one from diarrhœa, and one from erysipelas.

Twenty cases of scarlatina were admitted to hospital, being 7 over the admissions in the preceding week. Twenty-seven scarlatina patients were discharged, 2 died, and 165 remained under treatment on Saturday, being 9 under the number in hospital at the close of the preceding week. There were also 20 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 9, showing a decline of 8 as compared with the admissions in the preceding week. Fifteen patients were discharged, one died, and 81 remained under treatment on Saturday, being 7 under the number in hospital on that day week.

Only one case of measles was admitted to hospital, against 6 in each of the two weeks preceding. Fourteen cases of the disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had fallen from 32 for the week ended April 23 to 24 in the following week, rose to 41, or 7 over the average for the corresponding week of the last ten years. The 41 deaths consist of 27 from bronchitis and 14 from pneumonia.

In the week ending Saturday, May 14, the mortality in thirty-three large English towns, including London (in which the rate was 15·7), was equal to an average annual death-rate of 16·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·8 per 1,000. In Glasgow the rate was 23·3, and in Edinburgh it was 16·7.

The average annual death-rate in the twenty-three principal town districts of Ireland was 22·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in sixteen of the districts to 6·3 in Londonderry—the 14 deaths from all causes registered in that district comprising 2 from whooping-cough, one from enteric fever, and one from diarrhœa. Among the 139 deaths from all causes registered in Belfast are one from measles, one from scarlatina, one from whooping-cough, 2 from diphtheria, 6 from enteric fever, and 5 from diarrhœa.

In the Dublin Registration District the registered births amounted to 270—138 boys and 132 girls; and the registered deaths to 151—83 males and 68 females.

The deaths, which are 20 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·5 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 21·3 per 1,000. During the first nineteen weeks of the current year the death-rate averaged 29·9, and was 1·1 under the mean rate in the corresponding period of the ten years 1888–1897.

As in the week preceding, only 16 deaths from zymotic diseases were registered. This number is 3 under the average for the nineteenth week of the last ten years. The 16 deaths comprise one from scarlet fever (scarlatina), 3 from influenza and its complications, 8 from whooping-cough, one from diphtheria, and 2 from enteric fever.

The number of cases of scarlatina admitted to hospital was 15, being 5 under the admissions for the preceding week. Twenty-two scarlatina patients were discharged, one died and 157 remained under treatment on Saturday, being 8 under the number in hospital on that day week. There were also 21 convalescents at Beneaven, Glasnevin.

Fifteen cases of enteric fever were admitted to hospital, being 6 over the admissions for the preceding week, but 2 under the number for the week ended April 30. Fifteen patients were discharged, and 80 remained under treatment on Saturday, being one under the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered is 26, being 5 under the average for the corresponding week of the last ten years, and 15 under the number for the previous week, but 2 over the number for the week ended April 30. The 26 deaths consist of 16 from bronchitis, 9 from pneumonia, and one from croup.

In the week ending Saturday, May 21, the mortality in thirty-three large English towns, including London (in which the rate was 15·7), was equal to an average annual death-rate of 16·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·9 per 1,000. In Glasgow the rate was 21·8 per 1,000, and in Edinburgh it was 17·8.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 23·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in fourteen of the districts to 10·2 in Sligo—the 7 deaths from all causes registered in that district comprising one from diphtheria and one from diarrhœa. Among the 146 deaths from all causes registered in Belfast are 2 from measles, 3 from whooping-cough, one from diphtheria, 13 from enteric fever, and 3 from diarrhœa. The 29 deaths in Cork comprise one from whooping-cough and one from diarrhœa, and the 17 deaths in Londonderry comprise 3 from whooping-cough.

In the Dublin Registration District the registered births amounted to 177—85 boys and 92 girls; and the registered deaths to 161—78 males and 83 females.

The deaths, which are 12 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·0 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 23·4 per 1,000. During the twenty weeks ending with Saturday, May 21, the death-rate averaged 29·6, and was 1·2 under the mean rate in the corresponding period of the ten years 1888–1897.

Only 15 deaths from zymotic diseases were registered, being one under the low number for each of the two weeks preceding, and 4 below the average for the 20th week of the last ten years. They comprise 3 from influenza and its complications, one from whooping cough, 2 from diphtheria, 4 from enteric fever, 3 from diarrhœa, and one from erysipelas.

The weekly number of cases of scarlatina admitted to hospital rose again to 20. Twenty-one scarlatina patients were discharged, one died, and 155 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week. This number does not include 21 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 14, being one under the admissions for the preceding week, but 5 over the number for the week ended May 7. Twenty patients were discharged, one died, and 78 remained under treatment on Saturday, being seven under the number in hospital on that day week.

The hospital admissions included, also, 3 cases of measles. These were the only cases of that disease in hospital on Saturday, 14 patients having been discharged in the course of the week.

Deaths from diseases of the respiratory system, which had fallen from 41 in the week ended May 7 to 26 in the following week, further declined to 22, or 8 under the average for the corresponding week of the last ten years. The 22 deaths comprise 13 from bronchitis and 8 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of May,* 1898.

Mean Height of Barometer, - - -	29·854 inches.
Maximal Height of Barometer (6th, 9 p.m.), -	30·316 ,,
Minimal Height of Barometer (3rd, 9 a.m.), -	29·106 ,,
Mean Dry-bulb Temperature, - -	50·6°
Mean Wet-bulb Temperature, - -	47·7°.
Mean Dew-point Temperature, - -	44·6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·296 inch.
Mean Humidity, - - - -	80·8 per cent.
Highest Temperature in Shade (on 8th & 25th),	63·7°.
Lowest Temperature in Shade (on 16th), -	36·0°.
Lowest Temperature on Grass (Radiation) (on 16th), - - - - -	33·0°.
Mean Amount of Cloud, - - -	63·9 per cent.
Rainfall (on 20 days), - - -	3·332 inches.
Greatest Daily Rainfall (on 2nd), - -	0·669 inch.
General Directions of Wind, -	N.W., W., N.N.E.

Remarks.

Like May, 1897, in the matter of temperature, May, 1898, proved very unlike that month in the matter of cloud, rainfall, and rainy days. It may be described as a cloudy, rainy, or showery, cold month. In May, 1897, the rainfall amounted to only 56 per cent. of the average; in May, 1898, it was 164 per cent. There was a remarkable preponderance of winds from polar points of the compass.

In Dublin the arithmetical mean temperature (51·2°) was decidedly below the average (52·0°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 50·6°. In the thirty-three years ending with 1897, May was coldest in 1869 (M. T.=48·2°), and warmest in 1893 (M. T.=56·7°). In 1896, the M. T. was 55·2°; and in 1897, 50·9°.

The mean height of the barometer was 29·854 inches, or 0·135 inch below the corrected average value for May—namely, 29·989 inches. The mercury rose to 30·316 inches at 9 p.m. of the 6th, and fell to 29·106 inches at 9 a.m. of the 3rd. The observed range of atmospheric pressure was, therefore, 1·210 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 50·6°, or 1·9° above the value for April, 1898, 48·7°. Using the formula, *Mean Temp.*= *Min.* + (*max.* − *min.* × ·47), the value was 50·8°, or 0·8° below the average mean temperature for May, calculated in the same way, in the twenty-five years, 1865–89, inclusive (51·6°). The arithmetical mean of the maximal and minimal readings was 51·2°, compared with a twenty-five years' average of 52·0°. On the 8th the thermometer in the screen rose to 63·7°—wind, W. It reached the same height on the 25th—wind, N.E. On the 16th the temperature fell to 36·0°—wind, W. The minimum on the grass was 33·0°, also on the 16th.

The rainfall amounted to 3·332 inches, distributed over 20 days. The average rainfall for May in the twenty-five years, 1865–89, inclusive, was 2·030 inches, and the average number of rainy days was 15·4. The rainfall and the rainy days were thus much above the average. In 1886 the rainfall in May was very large—5·472 inches on 21 days; in 1869, also, 5·414 inches fell on 19 days. On the other hand, in 1895, only ·177 inch was measured on but 3 days. In 1896 the fall was only ·190 inch on 7 days. In 1897 1·139 inches fell on 14 days.

A lunar halo was seen on the 4th; solar halos appeared on the 8th and 11th. High winds were noted on 9 days, but did not attain the force of a gale on any occasion. The atmosphere was slightly foggy on the 7th. Hail fell on the 12th, 13th, 16th, 17th, and 31st. Thunder and lightning occurred on the evening of the 23rd.

During the month the thermometer did not fall below 32° in the screen or on the grass. The mean minimal temperature on the grass was 42·9°, compared with 40·9° in 1897, 43·1° in 1896, 41·8° in 1895, 37·6° in 1894, 45·6° in 1893, 41·3° in 1892, 37·7° in 1891, 42·2° in 1890, 42·4° in 1889, 37·5° in 1888, and 37·9° in 1887. The maximum exceeded 60° on 8 days, but fell short of 50° on one day—the 2nd.

Very changeable weather prevailed during the greater part of the week ended Saturday, the 7th. Thursday and Friday, however, were very fine in Dublin. On Sunday heavy showers fell between 11 a.m. and 4 p.m. A still heavier downpour of rain occurred on Monday afternoon, when a deep depression passed slowly northwards across Ireland. This system attained its greatest intensity on Tuesday morning. At 8 a.m. the barometer was down to 29·03 inches at Valentia and 29·04 inches at Parsonstown. On Wednesday the centre of this depression was found off the W. of Scotland, whence a V-shaped trough of low pressure stretched south-eastwards across Great Britain to the Straits of

Dover. The weather now improved in Ireland but became rainy in England, particularly on Thursday, when a secondary depression passed eastwards from the S. of Ireland across England to Holland. On Friday a ridge of high pressure appeared over Ireland, but the barometer soon gave way again, though slowly, and a further copious downpour of rain occurred on Saturday afternoon. Mention should be made of a destructive thunder and hail storm which visited Plymouth on Monday forenoon. In Dublin the mean height of the barometer was 29·724 inches, pressure ranging from 29·106 inches at 9 a.m. of Tuesday (wind, S.S.E) to 30·316 inches at 9 p.m. of Friday (wind, S.E.) The corrected mean temperature was 49·6°. The mean dry-bulb temperature at 9 a.m. and 9 p.m. was 50·1°. The screened thermometers fell to 40·0° on Friday, and rose to 60·7° on Saturday. Rain fell on five days to the amount of 1·408 inches, ·669 inch being measured on Monday, and ·516 inch on Saturday. The prevalent wind was S.S.E.

The week ended Saturday, the 14th, was another period of changeable, showery weather. The periodic cold spell of the second week in May was particularly well marked, beginning on Wednesday and lasting to the end of the week. Atmospheric pressure was tolerably high at first, but subsequently depression after depression arrived from the Atlantic, so that the barometer fell fast all over Scandinavia and the British Isles. The climax was reached on Thursday morning, when the barometer read only 28·38 inches at Christiansund in Norway. In the rear of this primary disturbance (which finally passed away to the north-west) various secondary depressions continued to cross the British Islands up to and including Friday. Squalls, with heavy showers of rain and hail, and in some places thunder, were prevalent—the storms of Thursday and Friday being particularly severe. In Dublin the weather was fairly warm until Wednesday, but after that it was more like winter than late spring. On Saturday a sudden change for the better occurred, the wind shifting to N.E. and E., the sky clearing and temperature rising. In Dublin the mean atmospheric pressure was 29·701 inches, and the barometer ranged from 30·111 inches at 9 p.m. of Sunday (wind W.N.W.) to 29·126 inches at 3·30 p.m. of Wednesday (wind N.W.). The corrected mean temperature was 49·8°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 49·1°. The screened thermometer rose to 63·7° on Sunday, and fell to 39·3° on Friday. Rain fell on five days to the amount of ·868 inch, the heaviest downpour in 24 hours being ·570 inch on Friday. Westerly to northwesterly and northerly winds prevailed.

The most remarkable feature about the week ended Saturday, the

21st, was the prevalence of broken, dull, cold and rainy weather in France and England, whereas finer, brighter weather ruled in Scotland and throughout the greater part of Ireland. The east coast of this country, however, came in for a good deal of rain and squally N. and N.E. winds. On Sunday morning depressions were found off the North of Scotland and over the English Channel—northerly winds and fair, cold weather prevailed in Ireland. By Tuesday morning another shallow depression had advanced to the North of Ireland and West of Scotland. It caused cold, showery weather. As the day wore on this system dispersed, and an anticyclone began to form over Norway, Scotland, and Ireland. Meanwhile a new and large depression appeared over Italy, whence it moved slowly north-westwards towards England and the Netherlands. As it travelled it caused ever freshening N.E. winds, dull, cold, and very rainy weather. These unsettled conditions did not reach the W. and N.W. of Ireland until Saturday night, when rain fell generally in considerable quantities. In Dublin the mean height of the barometer was 30·089 inches, pressure ranging between 30·293 inches at 9 p.m. of Wednesday (wind N.E.) and 29·810 inches at 9 p.m. of Saturday (wind N.E.). The corrected mean temperature was 49·9°. The mean dry bulb reading was 49·5°. On Monday the screened thermometers sank to 36·0°, on Friday they rose to 63·6°. Rain fell on four days to the amount of ·749 inch, of which ·331 inch was measured on Saturday and ·248 inch on Tuesday. The prevailing winds were at first W., afterwards N.E. Hail showers fell in Dublin on Monday and Tuesday.

Very favourable, yet generally uneventful weather prevailed throughout the week ended Saturday, the 28th. On Sunday, Monday, and Tuesday, however, there were electrical disturbances in many parts of England and Ireland, and on Monday evening thunder and lightning occurred near Dublin, while there was a thunderstorm at Roche's Point, Cork Harbour, on Wednesday evening. These electrical manifestations were connected with a large though shallow depression, which had travelled from Italy to the British Islands during the previous week. From Monday onwards another low pressure system was observed over Denmark and Norway. It caused cool northerly winds and low temperatures, but the rainfall which accompanied it was not as a rule large. During the last three days conditions were distinctly anticyclonic in Ireland, to the westward of which country the barometer ruled high. The amount of cloud was particularly large for May, except on Tuesday afternoon and throughout Wednesday. In Dublin the mean height of the barometer was 29·892 inches, pressure ranging between 29·736 inches at 9 p.m. of Sunday (wind E.) and 30·182 inches at 9 p.m. of Saturday (wind N.W.). The corrected mean temperature was 53·2°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 52·7°. On Wednesday the screened thermometers rose to 63·7°, on Friday they fell to 39·9°. The rainfall was ·087 inch on three days, ·070 inch being measured on Monday. Easterly and then northerly winds prevailed.

The last three days were unsettled, cloudy, squally, and showery. There was moderate warmth on Sunday, the 29th, when the shade maximum was 60·7°, but temperature then fell away, and Tuesday, the 31st, was like a March day, hail falling in heavy showers from time to time.

The rainfall in Dublin during the five months ending May 31st amounted to 10·568 inches on 84 days, compared with 10·693 inches on 93 days in 1897, 5·971 inches on 70 days in 1896, 10·410 inches on 68 days in 1895, 12·709 inches on 90 days in 1894, 7·908 inches on 66 days in 1893, 10·099 inches on 80 days in 1892, only 5·995 inches on 63 days in 1891, 11·483 inches on 76 days in 1890, and a twenty-five years' average of 10·496 inches on 81·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·555 inches distributed over 22 days—1·080 inches falling on the 2nd and·400 inch on the 7th. The total fall since January 1st, 1898, equals 12·445 inches on 78 days, compared with 14·120 inches on 90 days in 1897, 5·716 inches on 52 days in 1896, 12·845 inches on 58 days in 1895, 15·696 inches on 85 days in 1894, and 9·565 inches on 65 days in 1893.

The rainfall at Cloneevin, Killiney, Co. Dublin, was 3·330 inches on 21 days, compared with 0·850 inch on 10 days in May, 1897—0·66 inch falling on the 7th. At this station the average rainfall in May in the twelve years 1885–1896 was 2·061 inches on 13 days. May, 1896, was a very dry month, only 0·06 inch falling on 2 days. Since January 1, 1898, 11·07 inches of rain have fallen on 82 days at Cloneevin. The corresponding figures in 1897 were 11·21 inches on 93 days.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall in May was 3·251 inches on 19 days, compared with 0·802 inch on 11 days in May, 1897. The maximal fall in 24 hours was 1·119 inches on the 2nd. Since January 1, 12·459 inches of rain have fallen at this station on 74 days. The maximum shade temperature was 64·0°, on the 8th; the minimum was 35·2°, on the 16th.

PERISCOPE.

HUGE PUTRID ABSCESS OF BROAD LIGAMENT, THREATENING PERITONITIS; VAGINAL INCISION AND DRAINAGE; RECOVERY.

DR. JAMES R. WALLACE, M.D., F.R.C.S.I., reports the following case in the *Indian Medical Record*, May 16, 1898:—On the 20th March, 1898, I was asked by a medical man in the suburbs of Calcutta to see one of his patients, Mrs. L., a Scotch lady of 30 years of age, who was suffering from pelvic inflammation. There was a history of a miscarriage of a two months' conception which had taken place two weeks before I was called in. Intermittent bleeding had followed expulsion of the uterine contents, and on the 7th day after the mishap fever set in and the discharges became foul, while at the same time severe pain was felt in the abdomen, and the uterus and its appendages were very tender and surrounded with an ill-defined swelling. When I saw the patient her temperature was 104° F., the abdomen was tumified and tender, there had been much vomiting all that day, and she was very depressed and low. She was chloroformed and the uterus was quickly dilated with a set of silver-plated Hegar's dilators, and the uterine cavity was thoroughly curetted. Several pieces of putrid membranous remnants were removed, and the uterus and vagina were plugged with iodoform and boric acid gauze. There was a remarkable subsidence of pain, fever, and vomiting, for three days, and during this time the vagina was douched with a solution of bichloride of mercury with which laudanum was mixed. On the 26th March the pain and fever returned, associated with a very marked swelling of the abdomen and a filling up of both sides of the pelvic cavity with effusion, which bulged into the vaginal culs-de-sac. There was also a recurrence of the most distressing vomiting. On the 30th March fluctuation was evident, and I aspirated the pelvic mass vaginally, and drew off six ounces of thick, putrid-smelling, sanguino-purulent matter. As the patient was very low, and as the abdominal tenderness was very acute, it was feared peritonitis might supervene, so at the suggestion of her regular medical attendant the patient was brought into town and placed under my care. Next day I found the pelvic mass larger than before, and I decided to make an incision into the centre of it through Douglas' pouch, to insert a glass drainage tube and flush the cavity with boiled water. This procedure was accordingly adopted. About a pint and a half of horribly putrid-smelling pus followed the vaginal incision, and a Greig Smith's glass drainage tube (3″ × ¼) was quickly adjusted into the opening. The pelvic cavity was irrigated, and the vagina was gently filled with iodoformised boric gauze. An hour before the operation the temperature was 105·4°, there was incessant vomiting, there was marked tympanites, and the patient could not straighten her limbs, but kept them flexed to avoid pain. She was so exhausted that I feared to give her chloroform, and so the operation was performed without any anæsthetic. It was done quickly and the patient bore it most pluckily and well. Within an hour the temperature fell to 100°, and it never rose beyond 101° during the three weeks of her subsequent easy and uneventful convalescence. Every unpleasant symptom was completely relieved by the operation. Perchloride of mercury irrigations of the vagina were kept up for a fortnight, and the gauze packing was continued for a week, though the glass tube was removed on the second day following the operation. On the 18th April the patient was well enough to go to her suburban home, and she was seen and carefully examined by Surgeon-Lieutenant-Colonel R. Havelock Charles, F.R.C.S.I., on this date. There was still some inflammatory deposit impeding the mobility of the uterus, but it was thought the patient might safely pass out of my hands, with the caution that she was to be fairly restful and avoid sexual intercourse for at least two months. *Remarks.*—This case pointedly illustrates the excellent surgical value of vaginal incision and free drainage in cases of abscess of the uterine appendages; especially does it prove that this procedure may obviate the more dangerous operation of laparotomy.

THE WEST AFRICAN MEDICAL SERVICE.

THE Director-General of the Army Medical Department informs us that appointments in the West African Service are again open.

ASSOCIATION FRANÇAISE DE CHIRURGIE.

THE twelfth Congress of the Association française de Chirurgie, will open at Paris, in the Faculty of Medicine, on Monday, October 17, 1898, under the Presidency of Professor Le Dentu, Member of the Academy of Medicine, and Surgeon of the Necker Hospital. The Congress will be held from the 17th to the 22nd of October. The inaugural ceremony will take place at 2 p.m. on October 17. Two questions have been set down for discussion—1. On *Nephrotomy*: Speakers—Messieurs Guyon and Albarran. 2. The *Treatment of Goître* (cancer and exophthalmic goître excepted): Speaker—M. J. Reverdin, of Geneva. The members of the

Association are requested to forward, not later than August 15, the title and an abstract of their papers to M. Lucien Picqué, Secretary-General, Paris, 8 Rue de l'Isly. All questions relating to the Congress should be addressed to the Secretary-General.

TO PREVENT CHILBLAINS.

M. Broca (*Lyon Médical*) prescribes the following treatment for those who suffer from chilblains:—Take plenty of walking exercise; avoid extremes of heat and cold; use warm water for washing the hands and feet, and take two to four of the following pills daily:—Quinine sulphate, 5 centigr.; ergotin, 5 centigr.; digitalis leaf in powder, 5 milligr.; belladonna extract, 5 milligr. Make into one pill.

NEPHROPEXY WITHOUT SUTURING.

Dr. Senn (*The Journal A. M. A.*) gives the following details of his operation of nephropexy without suturing:—After exposing the kidney by Simon's vertical lumbar incision the viscus is pushed into the wound by an assistant. About half of the kidney should project below the lower margin of the last rib. With dissecting forceps and curved scissors the adipose capsule is excised over the whole posterior surface of the kidney. The kidney is now brought well forward into the wound, the cut margins of the adipose capsule are pushed away from the kidney until the borders are freely exposed, when the fibrous capsule is thoroughly scarified with a long needle. At this stage of the operation the lower border of the kidney is grasped by its capsule with a French volsella forceps, and brought well forward into the wound. With dissecting forceps, finger, and blunt dissector, the lower third of the kidney is laid bare, and a strip of iodoform gauze about an inch in width and composed of four layers of gauze is placed under the lower end of the kidney and each end brought out over the respective wound margin. By making traction on the forceps and gauze strip the lower end of the kidney is brought sufficiently forward to rest in the lower angle of the external incision. During the operation the margins of the external incision must be well retracted. With a long strip of iodoform gauze the floor of the wound is then carefully packed in such a way as to force the para-renal fat away from the borders of the kidney, leaving the posterior scarified surface well exposed, when, with the same strip of gauze, this is covered and the whole wound well tamponed with another piece of gauze. The strip of gauze holding the kidney is then tied over the iodoform gauze tampon, which forms a wedge, and will effectually prevent displacement of the organ until firm adhesion has rendered any direct mechanical support superfluous. The two pieces of gauze are tied together and the wound dressed in the usual manner. No part of the lumbar incision is sutured. At the end of five or six days the tampon is removed.

RECLAMATION BY DR. LEWERS.

THE fifth edition of Dr. Arthur H. N. Lewers' well-known work on "Diseases of Women" was reviewed in the number of this Journal for May, 1898 (Vol. CV., No. 317, third series, page 430). Dr. Lewers writes to us calling in question the accuracy of some of the reviewer's criticisms. We have submitted his letter to the reviewer, who replies—"It is customary, I think, in your Journal to omit appointments, &c., held by authors of books commented on, and it certainly did not occur to me to depart from the usual course in the case of a gentleman so well known as Dr. Lewers." [There is no rule on the subject—ED., *D. J. M. S.*]

"He explains that the injury caused to Hegar's dilators by boiling is that the handles are liable to come out, and I can only say that the improved Hegar's dilators in use now for many years have no handles.

"I readily apologise for representing Dr. Lewers as stating that catgut may be sterilised by dry heat at a temperature of 150° F. But I think I may be pardoned for concluding that he adopted the scale generally used in English works in the absence of any letter to indicate his meaning." [Dr. Lewers wrote "150°," meaning thereby 150° Centigrade=334° Fahrenheit—ED., *D. J. M. S.*]

We frankly accept Dr. Lewers' correction of our faulty spelling of volsella, which was borrowed from the instrument makers' catalogues. "Vulsellum" is, of course, wrong. Dr. Lewers traverses the reviewer's statement that the sound "is seldom passed without the aid of a volsella," to which our reviewer rejoins: "I err in the company of the leading German, French, and American writers."

It is stated in the review that "directions as to the method of passing a catheter are omitted." Dr. Lewers replies that "there is a paragraph on the subject from which I think it is fairly obvious that I advise the catheter to be passed under the guidance of the eye, and reject any method of passing it by touch alone, for fear that dirty material may be unwittingly so carried into the bladder."

As to the whole question, our reviewer says—"I am exceedingly sorry that Dr. Lewers considers the tone of my review discourteous. It would cause me great pain if I thought I had left myself open to this charge, which I do not think is well founded . . . . If Dr. Lewers takes the trouble of again reading my review, I feel sure that he will take a more liberal view of it."

[With these sentiments we are thoroughly in accord.—EDITOR, *D. J. M. S.*].

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

AUGUST 1, 1898.

PART I.

ORIGINAL COMMUNICATIONS.

Art. VI.—*Clinical Report of the Rotunda Lying-in Hospital, for One Year, November* 1, 1896, *to October* 31, 1897.

By R. Dancer Purefoy, M.D., Master; T. Henry Wilson, Henry Jellett, R. P. R. Lyle, Assistant Masters.

(*Continued from page 86.*)

Table II.—Special Operations.

Perineorrhaphy—		
Lawson Tait's - - -	37	
Sänger's - - -	6	
Lawson Tait's (for complete rupture) -	4	
		47
Anterior colporrhaphy - - -		17
Colpo-perineorrhaphy—		
Hegar's - - -	22	
Martin's - - -	3	
		25
Trachelorrhaphy—		
Emmet's - - -	8	
Sänger's - - -	5	
		13
Amputation of cervix—		
Schröder's - - -	25	
Circular - - - -	1	
		26

Excision of benign growth from cervix		1
Schultze's treatment of adherent retroversion		4
Posterior division of the cervix		25
Marion Sims' operation for cervical carcinoma		2
Plastic operation for recto-vaginal fistula		1
Vaginal cœliotomy—		
Hysteropexy	2	
Hysterectomy	2	
„ (by morcellement)	2	
Ovariotomy	2	
Exploratory	3	
		11
Ventral cœliotomy—		
Panhysterectomy	9	
Ovariotomy	14	
Salpingo-öophorectomy	21	
Miscellaneous	7	
Exploratory	4	
		55

Posterior Division of Cervix (or Marion Sims' operation) was performed, according to Dudley's modification, twenty-five times—once for cervical elongation in a nulliparous woman; fourteen times for pathological anteflexion, or [and] stenosis of the uterine canal, occurring in married women whose chief symptoms were sterility, or [and] dysmenorrhœa; and ten times in unmarried women, with a similar condition, but whose chief symptom was dysmenorrhœa.

Schröder's Amputation of the Cervix was performed twenty-five times—eighteen times for laceration, associated with hypertrophy, or [and] erosion; five times for hypertrophy, unassociated with laceration; and twice for erosions occurring in unmarried women.

VAGINAL CŒLIOTOMIES.

CASE 11.—Owing to extensive ulceration of the cervix the actual cautery was freely used before the operation was commenced. The body of the uterus was small, and there was no difficulty in removing it. There was some thickening in the broad ligaments, and clamps were used; the clamps were removed on the third day. She died on the seventh day, when the temperature ran up to 104° F., with almost total suppression of urine. Pain continued

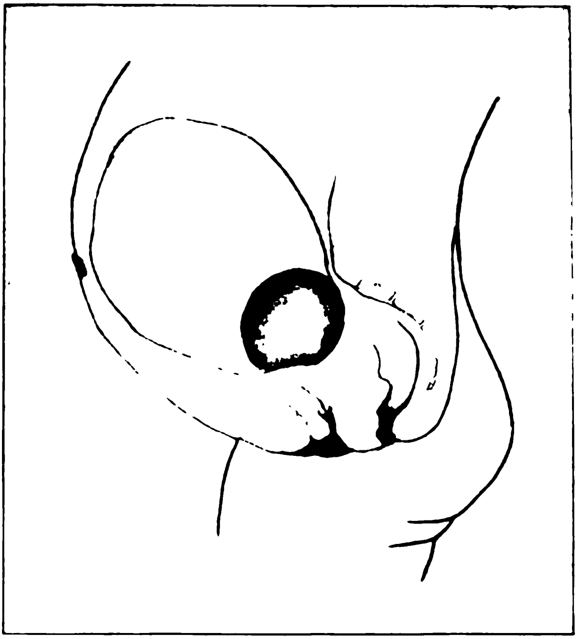

Plate VII. (Diagrammatic).—Ovarian Fibro-cystic Tumour simulating Pregnancy.

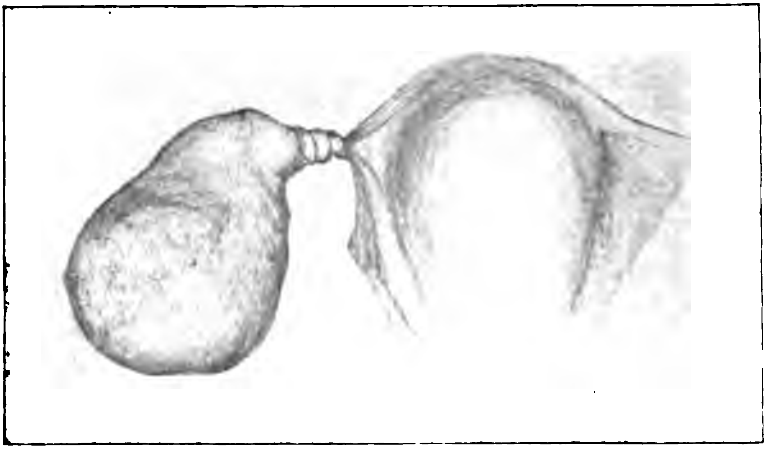

Plate VIII.— Pyosalpinx with twisted pedicle.

all along, and on the day before death there was some foul-smelling discharge from vagina. *Post-mortem* showed some sloughing where the clamps had been applied, which extended to the pelvic peritoneum; the kidneys were granular and contracted, and were probably the primary cause of death. As the latter did not occur during the clinical year, it is not included in the list of deaths.

OVARIOTOMIES.

CASE 14.—Tumour was the size of a full-time pregnancy; was separate from the uterus; partly cystic and partly solid; the solid part resembled a fœtal head felt through liquor amnii. The cyst contained a large quantity of dirty black fluid; there was no trouble removing it. (See Plate VII.)

SALPINGO-OÖPHORECTOMIES.

CASE 2.—The stitches were removed on the eighth day. During the night she had a severe fit of coughing, and when seen in the morning the wound was found opened, the intestines having escaped under the dressings. She was anæsthetised and the dressings were removed, when it was found that about three feet of the intestine was protruding and was adherent to both skin and dressings. The adhesions were separated, the protruding intestine thoroughly cleansed with boric lotion, the abdomen irrigated with same lotion, the edges of the wound vivified and resutured. The patient made an uninterrupted recovery.

CASE 4.—This is a rare condition; the pedicle was twisted three times on itself, as shown in illustration. (See Plate VIII.)

CASE 15.—It was first attempted to remove this tumour by vaginal cœliotomy, but on account of dense adhesions the operation was abandoned, and eleven days later ventral cœliotomy was performed. The tumour, together with right tube and ovary, was removed, and proved to be a hydrosalpinx about the size of a kidney. Convalescence normal.

CASE 16.—During the breaking down of adhesions which bound a tumour—probably a dilated tube, in Douglas' pouch—some pus escaped into the pelvic cavity; the mesentery was also adherent in this region. The tumour was removed with difficulty along with an ovarian cyst, size of an orange, and a parovarian cyst (?) was shelled out from the posterior aspect of the right broad ligament. The pelvis was wiped out, Mikulicz bag inserted, and abdomen closed. After the removal of the bag pus continued to come from the pelvic cavity for a considerable time and it was found necessary to introduce a glass drainage-tube to prevent the wound closing on the surface. This probably caused the development of a fæcal fistula which occurred a fortnight after the operation. This had almost closed when the patient left hospital, against advice, two and a half months after operation. She has been seen several times since, and is now perfectly well.

Case 18.—Last confinement, March 12th, 1897. Menstruated seven weeks later, followed by amenorrhœa for two months. At the end of July had a hæmorrhage, which lasted half-an-hour, with bearing-down pain; was found on examination, on August 16th, to have a tumour filling Douglas' pouch adherent to uterus, which was somewhat enlarged. On August 31st this tumour was removed by ventral cœliotomy; the uterus was the size of a four months' pregnancy, and—as it was doubtful whether it was not due to a soft myoma—the right tube and ovary were also removed. This proved to be an ectopic gestation of the left side; when examined before being discharged on the 28th September the uterus was the size of a five months' pregnancy, which was diagnosticated. She has since written from the country that she was delivered on the 24th October of a premature child, which lived only a few hours.

Case 19.—Admitted with history of amenorrhœa for two months, followed by hæmorrhagic discharge and pain for five weeks. She was suddenly seized on her second night in hospital by severe pain in the abdomen, accompanied by vomiting. Rupture of the tube was diagnosticated; the abdomen was opened, and a ruptured tubal pregnancy, from which a large quantity of blood-clot had escaped into the abdominal cavity, was removed. Patient made an uninterrupted recovery and left hospital four weeks later.

Case 20.—This patient aborted ten weeks previously and since had had two normal menstrual periods. She sought admission to hospital for hæmorrhage, lasting for a fortnight. The tumour was the size of an orange and the corresponding ovary was cystic. (See Plates IX. and X.)

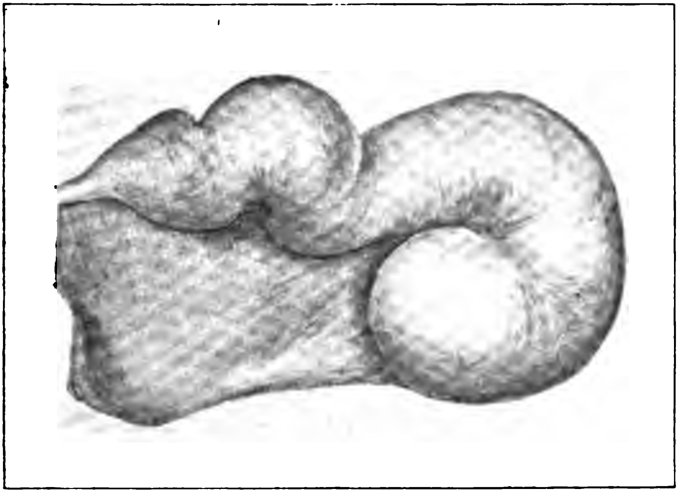

Plate IX.—A case of Pyosalpinx.

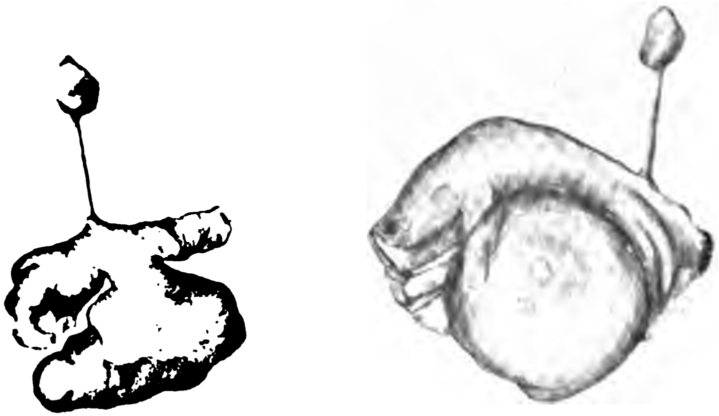

Plate X.—A case of Double Pyosalpinx with Hydatids of Morgagni.

TABLE III.—VAGINAL CŒLIOTOMIES.

No.	Name	Age	Disease	Operation	Result	REMARKS
1	M. M.	36, M.	Prolapsus uteri .	Mackenrodt's vaginal fixation	Cured .	—
2	S. A.	49, M.	Multinodular myoma .	Doyen's morcellement	Cured .	—
3	K. W.	47. M.	Procidentia uteri .	Mackenrodt's vaginal fixation	Cured .	—
4	M. M.	38, M.	Intra-cervical carcinoma and myoma	Hysterectomy .	Cured .	Seen twelve months later. She says she never enjoyed better health.
5	E. H.	41, S.	Ovarian cirrhosis .	Double ovariotomy .	Cured .	Operation difficult on account of short ligament and narrow vagina.
6	L. G.	26, M.	Hydrosalpinx . .	Exploratory . .	—	See Table VI., Case 17.
7	J. C.	34, M.	Myoma . .	Doyen's morcellement	Cured .	—
8	J. N.	40, W.	Tubercular disease of peritoneum	Exploratory . .	Relieved	Caseous nodule removed and found tubercular.
9	K. W.	27, M.	Dermoid cyst . .	Left ovariotomy .	Cured .	Cyst contained a quantity of hair.
10	L. D.	28, M.	Ovarian cyst . .	Exploratory . .	Relieved	Cyst too adherent to be removed. Patient examined twelve days later; cyst had disappeared.
11	M. M'C.	48, M.	Cervical carcinoma .	Hysterectomy .	Died .	*Vide supra.*

VENTRAL CŒLIOTOMIES.

TABLE IV.—PANHYSTERECTOMIES.

No.	Name	Age	Disease	Result	REMARKS
1	M. M'C.	40, M.	Large cystic myoma	Died .	Tumour weighed 16 lbs. *Vide infra*, under "Deaths."
2	E. M.	37, M.	Large myoma .	Cured .	Size of 6½ months' pregnancy. Confined six months previously.
3	S. M'N.	30, M.	Large myoma .	Cured .	Size of 7 months' pregnancy.
4	R. H.	33, S.	Fibro-cystic myoma	Cured .	Size of 6 months' pregnancy.
5	K. M.	40, M.	Myoma . .	Cured .	Size of 4½ months' pregnant uterus.
6	M. N.	46, M.	Myoma . .	Died .	Size of large fœtal head. *Vide infra*, under "Deaths."
7	R. L.	50, M.	Large myoma .	Died .	Extended to ensiform cartilage. *Vide infra*, under "Deaths."
8	M. P.	36, M.	Myoma . .	Cured .	Extended to umbilicus.
9	W. B.	32, S.	Large myoma .	Cured .	Weighed 12½ lbs.; capsule very vascular.

TABLE V.—OVARIOTOMIES.

No.	Name	Age	Disease	Operation	Result	REMARKS
1	M. D.	29, M.	Dermoid of both ovaries	Double	Cured	Each size of Tangerine orange.
2	B. D.	37, M.	Multilocular ovarian cyst	Left	Cured	Size of seven months' pregnancy.
3	M. R.	48, M.	Ovarian cyst .	Left	Cured	Size of seven months' pregnancy.
4	M. C.	22, S.	Ovarian cyst .	Right	Cured	Extending to umbilicus.
5	E. M.	28, M.	Ovarian cyst .	Right	Cured	Size of an orange; adherent to intestines by firm adhesions, which required division with the scissors; peritoneal coat of intestine stitched in several places; convalescence normal.
6	A. C.	26 M.	Ovarian cyst	Left	Cured	Size of fœtal head.
7	M. A. J.	60, W.	Ovarian cyst	Right	Cured	Size of seven months' pregnancy; cyst thick-walled, containing thick mucoid fluid.
8	M. G.	50, S.	Multiple myomata .	Right	Cured	Left ovary atrophied.
9	M. M'D.	54, S.	Multilocular ovarian cyst	Right	Died	Size of full-term pregnancy. *Vide infra*, under "Deaths."
10	M. M.	50, W.	Glandular ovarian tumour	Right	Cured	Size of seven months' pregnancy.
11	S. S.	50, S.	Fibro-myoma of ovary	Right	Cured	Size and shape of a large saucer, two inches thick; pedicle, narrow band 6 inches long; myomectomy in addition; calcified myoma size of hen's egg.
12	E. M.	36, M.	Ovarian cyst .	Left	Cured	Size of tennis ball.
13	A. B.	19, S.	Ovarian cyst .	Right	Cured	Cyst size of 4½ months' pregnancy; tapped before removal.
14	A. S.	33, M.	Ovarian cyst .	Right	Cured	Simulated pregnancy. *Vide infra.*

TABLE VI.—SALPINGO-ÖOPHORECTOMIES.

No.	Name	Age	Disease	Operation	Result	REMARKS
1	H. C.	47 S.	Benign adenoma	Left	Cured	
2	T. M'K.	32 M.	Double hæmatosalpinx	Double	Cured	*Vide supra.*
3	B. E.	25 M.	Right hæmatosalpinx	Double	Cured	Right tube adherent in Douglas' pouch, ruptured on manipulation, with escape of two large blood clots; left tube diseased; abdomen irrigated.
4	M. B.	18 M.	Pyosalpinx	Left	Cured	Twisted pedicle. *Vide supra.*
5	E. M.	28 M.	Dilated tube and cystic ovary	Left	Cured	Left parotitis on fourth day. Suppuration in parotid gland on tenth day, which detained her in the hospital till the fifth week.
6	M. J. C.	40 M.	Ovarian cyst and hæmatosalpinx	Right	Cured	Cyst size of five-months' pregnancy, with a twisted pedicle.
7	M. A. O'B.	37 M.	Tubercular ovary and tube	Right	Cured	Was detained in hospital for a considerable time owing to purulent discharge from abdominal wound; twelve months later patient in good health.
8	E. W.	36 S.	Multiple myomata	Double	Died	*Vide infra*, under "Deaths."
9	R. G.	26 M.	Ruptured hæmatosalpinx	Right	Cured	Abdomen irrigated. Patient markedly jaundiced on third day, which lasted two days.
10	N. W.	20 M.	Right hæmatosalpinx Left pyosalpinx	Double	Cured	Small sinus in abdominal wound. Four months afterwards a piece of silk came away, and sinus persisted for more than nine months after operation.

11	M. R.	28 M.	Ruptured tubal pregnancy	Left	Cured	Tumour filled the whole of Douglas' space, and had ruptured.
12	F. C.	28 M.	Adenoma of both tubes	Double	Cured	
13	M. K.	30 M.	Double pyosalpinx	Double	Cured	Left tube matted in Douglas' pouch, with a piece of omentum and a coil of intestine. In separating adhesions intestine was injured, and was stitched.
14	A. M'G.	40 M.	Double pyosalpinx and ovarian cyst	Double	Cured	Cyst of considerable size filling lower part of abdomen. Some pus had escaped from the tubes into the pelvis.
15	L. G.	26 M.	Hydrosalpinx	Right	Cured	*Vide supra.*
16	M. L.	27 M.	Double pyosalpinx Ovarian cyst Parovarian cyst	Double	Cured	*Vide supra.*
17	K. R.	26 M.	Cystic ovaries and enlarged tubes	Double	Cured	Left ovary size of a large egg, and attached to the uterus by vascular adhesions which gave considerable trouble during operation.
18	A. F.	34 M.	Left tubal pregnancy	Left	Cured	Concomitant uterine pregnancy. *Vide supra.*
19	M. A. B.	30 M.	Ruptured tubal pregnancy	Right	Cured	*Vide supra.*
20	J. W.	34 M.	Ruptured tubal pregnancy and cystic ovary	Right	Cured	*Vide supra.*
21	H. T.	30 M.	Enlarged tubes and ovaries	Right	Relieved	Uterus myomatous—appendages very firmly adherent posteriorly.

TABLE VII.—MISCELLANEOUS.

No.	Name	Age	Disease or Condition	Result	REMARKS
1	A. M.	56, M.	Ventral hernia . .	Cured .	Following cœliotomy four years previously.
2	M. S.	34, M.	Ventral hernia . .	Cured .	Following cœliotomy three years previously.
3	A. T.	27. M.	Umbilical epiplocele .	Cured .	Following confinement five years previously. Surface had commenced to ulcerate.
4	I. B.	39, M.	Ventral hernia . .	Cured .	Following cœliotomy six years previously. Three confinements in the meantime.
5	L. C.	26, M.	Large abdominal abscess	Died .	*Vide infra*, under "Deaths."
6	C. M.	49, M.	Myoma . . .	Cured .	Size of six months' pregnancy. Myomectomy.
7	M. B.	30, S.	Multiple myomata .	Cured .	Two pedunculated myomata, size of oranges, ligatured and removed. Abscess in left broad ligament burst during removal. Convalescence normal. Great hypertrophy of cervix, which protruded from the vulva, amputated five weeks subsequently.

TABLE VIII.—EXPLORATORY.

No.	Name	Age	Disease	REMARKS.
1	M. P.	22, M.	Acute general peritonitis	Abdomen opened and irrigated. Patient died same night. *Vide infra*, under "Deaths."
2	B. G.	55, M.	Malignant tumour (?)	Tumour extended from the pelvis to three inches above the umbilicus, and was universally adherent. No attempt at removal.
3	E. O'H.	20, M.	Adherent retroversion, causing severe pelvic pain	Fundus bound to rectum by old, firm adhesions. In breaking these down there was free hæmorrhage, controlled by continuous suture. Appendages normal.
4	C. B.	50, M.	Calculus in ureter (?)	Removal failed. *Vide infra.*

Table IX.—Deaths.

No.	Name	Age	Disease	Operation	Cause of Death
1	B. F.	56, M.	Multiple myomata . .	Panhysterectomy . .	Bronchitis.
2	M. M'C.	40, M.	Large cystic myoma . .	Panhysterectomy . .	Shock.
3	M. F.	32, M.	Endometritis . . .	Curetted; iodine injected .	Acute sepsis.
4	E. W.	36, S.	Multiple myomata . .	Double salpingo-oöphorectomy	Intestinal obstruction.
5	M. P.	22, M.	Acute general peritonitis .	Abdominal cavity opened and washed out	Septic peritonitis.
6	M. M'D.	54, S.	Multilocular ovarian tumour .	Ovariotomy . . .	Septic pneumonia.
7	M. N.	56, M.	Myoma uteri . . .	Panhysterectomy . .	Intestinal paralysis.
8	R. L.	50, M.	Myoma uteri . . .	Panhysterectomy . .	Shock.
9	L. C.	26, M.	Abdominal abscess . .	Abscess cavity opened and washed out	Tubercular peritonitis and meningitis.

EXPLORATORY (TABLE VIII.)

CASE 4.—Patient, on admission, complained of pain in lower abdomen, increasing in severity, also frequency of micturition accompanied by bearing-down pain and blood in the urine. There was some œdema of extremities. She had ceased menstruation for eight years. On examination, under an anæsthetic, the uterus was found to be very small and movable. To the right of it and slightly in front there was a hard irregular swelling about the size of a hen's egg adherent to the vaginal vault and probably extra-peritoneal. An irregularity could be felt in the posterior wall of the bladder, and the catheter came away full of almost pure blood. An exploratory ventral cœliotomy was performed, when it was found that uterus and appendages were atrophied. To the right side, and adherent to the wall of the pelvis, to the vaginal wall, and to other structures, a hard mass as large as a pigeon's egg was found. It was impossible to remove this, and the abdominal wound was closed with the intention of doing a vaginal operation later on, on the supposition that the hard mass was a calculus impacted in the ureter, which was considerably dilated above it. A colpotomy was performed twenty-one days later, but it was again found to be impossible to remove the mass and the patient was returned to bed. On discharge patient's bladder-symptoms were considerably improved.

DEATHS.

CASE 1.—This patient was operated on previous to Nov. 1st, 1896; but as her death occurred on Nov. 7th we have included her in our mortality table. A vaginal hysterectomy was attempted, but owing to a large number of adhesions it was not proceeded with, and the operation had to be completed by a ventral hysterectomy. Patient lost a considerable amount of blood, got uncontrollable diarrhœa in addition to bronchitis, and died ten days later. There was no peritonitis.

CASE 2.—With a history of three years' growth, the tumour reached almost to the ensiform cartilage, filling the pelvis and abdomen; it weighed 16 lbs. The patient had been suffering from menorrhagia for some months previous to operation, and her condition was low. The operation was not difficult, but the patient could not stand the shock, and died fifteen minutes after being put to bed.

CASE 3.—Complaining of menorrhagia and dysmenorrhœa, she was curetted on Jan. 25, 1897, and as a considerable quantity of thickened endometrium was brought away with the curette, iodine was injected. The temperature commenced to rise on the next day, and reached 107·8° F. with a pulse of 130 on the fifth day. Notwithstanding uterine douching, and plugging with iodoform gauze, the patient died on the sixth day. *Post-mortem* showed no pathological change except in the spleen, which was large and hard, and contained a small infarct.

Case 4.—For the past four months she had almost continuous hæmorrhage and severe pain; her uterus was myomatous, and both tubes enlarged. On opening the abdomen the pelvic contents were found universally adherent. Many of these adhesions were broken down, and both tubes and ovaries removed. Two days later patient commenced to vomit. Vomiting became incessant, the bowels could not be moved, and the abdomen became tympanitic. Intestinal obstruction was diagnosticated, and when the abdomen was re-opened a coil of intestine was found bound down by a band of adhesions causing complete obstruction; this was separated; she, however, did not recover.

Case 5.—This patient was admitted to hospital with acute general peritonitis; temperature, 103·2° F.; pulse, 120. There was an old prolapse of the uterus, with a sloughing ulcer on the cervix. The uterus was explored with a curette, and found empty. After consultation it was decided to open the abdomen and wash out the peritoneal cavity as a *dernier ressort*. In addition to general peritonitis the abdomen was full of fluid and lymph, which was washed out, the abdomen closed, and a drainage tube inserted. Patient died the same night.

Case 6.—Tumour was the size of a full-time pregnancy, and before it could be removed from the abdomen twenty-two cysts were opened and evacuated. There were several adhesions binding the tumour posteriorly; there was a large cyst found adherent in Douglas' pouch, and this was opened and removed. The temperature commenced to rise immediately after the operation, but never exceeded 101·6° F. Pulmonary symptoms supervened; she was seen in consultation, and septic pneumonia was diagnosticated. She died on the eighth day.

Case 7.—Myomatous uterus extending to umbilicus, and causing œdema of lower extremities and difficulty of micturition. Patient took the anæsthetic badly, in consequence of which there was considerable handling of intestines. On the fourth day she became very restless, and suffered from hiccough, but there was no vomiting; the bowels could not be moved. She died the next day. Temperature and pulse normal. The *post-mortem* examination revealed nothing abnormal; the intestines were greatly distended with gas.

Case 8.—Myomatous uterus extending almost to the ensiform cartilage, causing persistent and excessive hæmorrhage. She was extremely anæmic from the continuous loss of blood extending back for nearly twelve months, and had suffered from menorrhagia for the previous two years. The usual operative procedure for panhysterectomy was followed, but the loss of blood during the operation proving too much for her, she gradually collapsed, and died just at the conclusion of the operation.

Case 9.—This patient was admitted with a temperature of 103·4° F., pulse 140, five weeks subsequent to confinement, with a history of "fever" and rigors from that time. The temperature continued high, and there was considerable abdominal swelling, from which the uterus was free. The swelling extended from above the pelvic brim to midway between the umbilicus and ensiform. On opening the abdomen a large quantity of foul-smelling pus escaped (about three pints); the intestines were adherent to the abdominal wall, and in making the incision a coil of the small intestine was opened and was stitched. The patient progressed favourably for a fortnight after the operation, the cavity continuing to discharge thin pus. The wound, except at the point of drainage, healed by first intention. At the end of this time she began to complain of persistent neuralgia in the head, with marked slowing of the pulse. The neuralgia would not yield to any treatment, the temperature began to rise, and the urine was highly albuminous. She continued to get worse, and four weeks after her operation the note recorded as to her condition is as follows:—"The patient has been in a semi-comatose condition for the last twenty-four hours, has ptosis of the right lid, strabismus, nystagmus and paralysis of the left side of her body, the bowels have not acted for several days, and the enemata administered have not been retained." She died the succeeding day. *Post-mortem* examination showed general tubercular peritonitis, with the abdominal contents matted together. On the right side the tube, which was much distended with pus and 7½ inches long, opened into an abscess cavity in the right lumbar region. The left tube, also distended with pus and of almost a similar length, was adherent to a coil of intestine in the pelvis, where it had ruptured, allowing a large quantity of thin pus to escape. Permission could not be obtained to open the cranium.

ART. VII.—*Operations for Strangulated Hernia.*[a] By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

(*Continued from page 4.*)

FEMORAL HERNIA.

IN carrying out operations for this hernia one has to be very careful of the tissues near the saphenous opening. I therefore make an incision from a finger's breadth below Poupart's ligament, extending upwards for three inches—there must not be undermining of the tissues below the incision—pass the index finger backwards until the resistance of Gimbernat's ligament begins; the edge of this band should be caught up with the nail. Then pass a blunt-ended hernia knife with cutting part directed inwards, pushing the knife against the edge of the ligament and using a sawing movement. All this time the left index finger holds back the bowel, and now this finger follows the knife to find that the ring is free. Open sac, examine contents, and should the bowel or omentum be dark in colour but still glossy, irrigate with warm saline solution until the circulation is restored; return into abdomen.

RADICAL CURE.

When the operation may be prolonged, so that the radical cure can be carried out, the incision should be a semilunar one, beginning above the middle of Poupart's ligament convex downwards, and ending a finger's breadth above the spine of the pubes; when the flap thus formed is turned up, as in Fig. 1, the femoral ring and canal are fully exposed, and plenty of room is obtained for necessary manipulations. The sac of the hernia is cut transversely an inch to an inch and a half below Poupart's ligament, and after complete reduction of the bowel or omentum, a long-bladed clip forceps is pushed through the external oblique from without inwards, and made to come through the femoral ring in front of the sac, the mouth of which it now grasps. Traction on this brings it through the oblique muscle, as at A Fig. 1, where it is fixed as shown. Now a suture, with a fully curved needle at both ends, is passed deeply through the pectineus muscle, as at E E Fig. 1. The needles are now passed through the femoral canal, and made to pierce the external oblique, as at E E Fig. 2, no traction being made on the thread for the present. At this stage all bleeding points should be secured by ligature, and all forceps removed. Next, the pectineus muscle should be cut through, as shown by dotted line in Fig. 1, and the flap D drawn well inside the femoral ring to thoroughly block that opening, as shown

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[a] A Clinical Lecture. Delivered at St. Vincent's Hospital.

MR. M'ARDLE'S METHOD.

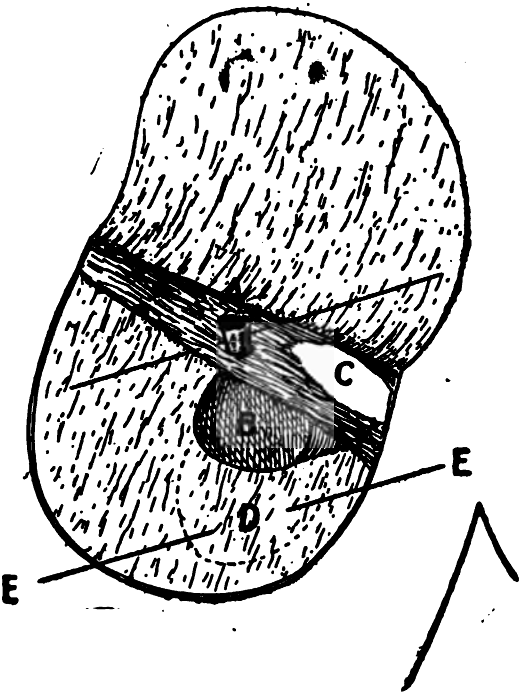

Fig. 1.

A. Sac drawn through above Poupart's ligament.
B. Neck of sac as first closing of femoral ring.
C. External abdominal ring.
D. Flap of pectineus destined to form second closing of femoral ring.
E. Sutures to bring flap D into position.

in Fig. 2. Replacement of the semilunar flap completes the procedure, silkworm-gut or silver wire being used to fix it in position.

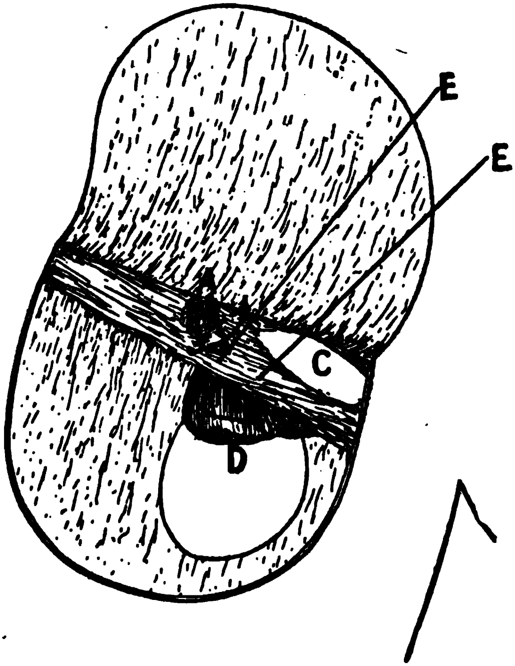

Fig. 2.

A. Sac fixed by suture.
B. Covered up by flap D.
C. External abdominal ring.
D. Piece of pectineus and pectineal fascia closing femoral ring.
E E. Suture passed above Poupart's ligament holding pectineal flap in position.

It is only in cases of long standing, and where truss pressure has caused a general matting of the tissues, that there is any trouble in carrying out this procedure. Occasionally a very thin-walled sac gives way if drawn with force through the external oblique, but this accident does not seem to interfere with the course of the cases, as the pectineus soon becomes fixed in its new position, and closure of the femoral ring is complete.

It is advisable to keep the patient in the recumbent position for at least three weeks, and to insist on a measure of quietude for a month or six weeks afterwards. During all this time a broad, thick pad and a spica bandage should be worn.

Truss pressure is injurious since it causes absorption of the plastic exudate, which is so necessary to a firm closing of the hernial track.

It must be remembered that the healing of the skin wound must not be taken as evidence of repair of the deeper structures, and long after the external wound is secure the slightest exertion may undo all the plastic work in the deeper parts.

ART. VIII.—*Some Remarks on Typhoid Fever.*[a]

By HENRY C. DRURY, M.D., F.R.C.P.I.; Assistant Physician to Sir Patrick Dun's Hospital; Temporary Physician to Cork-street Fever Hospital.

IT sometimes seems to me that we seek too much for out-of-the-way cases and rare conditions for the subject-matter of our discussions here, whereas the material lying at hand to everyone might prove more useful, not only to the person who made a thoughtful study of it, but also to the more general body of practitioners and patients. Consequently, though it may be said of typhoid fever as of other things, "There is nothing new under the sun," still it will be admitted there are many things to learn. Since the publication of Murchison's magnificent monograph on the Continued Fevers in 1862, little really new, and at the same time helpful, has been added to our knowledge of the subject, with the exception of the isolation of Eberth's bacillus in 1880.

"Widal's reaction," as a means of certain and scientific diagnosis, promised an important advance to our knowledge. The promise may yet be fulfilled, but it would be premature to say that it has been. No sufficiently exhaustive investigation, extending over a large number of cases of different diseases, and checked by autopsy—that wrecker of diagnoses—has yet been applied to the subject.

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[a] Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, November 28, 1897.

The most important communication on this question that I am aware of is that of Drs. Colville and Donnan, of Belfast, published in the *Brit. Med. Journal*, Oct. 16, 1897. They tabulate the results of the examination of 132 cases, by Widal's serum test for typhoid fever. The results are encouraging as far as they go, but the number is far too small from which to draw important and far-reaching conclusions. The cases which clinically ran a typhoid course numbered 105; of these 84 gave a complete reaction, 19 an incomplete reaction, and 2 no reaction at all. Only 27 clinically doubtful cases were tested, and of these only one gave the reaction, and it was a case of typhoid fever. In only one case was an autopsy performed, and it proved to be a case of general tuberculosis, but had not reacted to the test.

To make such an investigation of real use a much larger proportion of clinically doubtful cases should be examined. Let us suppose only four classes of cases to be examined—viz., typhoid fever itself, meningitis, tuberculosis, and ill-defined or simple fever. If the above 132 examinations were divided amongst these four it would only allow 33 for each—a number which, it will be allowed, is much too small, though the total of 132 represents no mean amount of time, work, and trouble.

Again, it is necessary that a large number of *post-mortem* examinations should be made of cases of all kinds that have been subjected to the test reaction. For this it would be necessary to make an autopsy in *every* case of death, and unfortunately our power to do this is so hampered by prejudice against such a real means of increasing our knowledge, that I fear it must be left to some less free country than ours to carry out the investigation.

Drs. Colville and Donnan say, "Surely a method which has proved in this instance to be correct in over 98 per cent. of cases, must undoubtedly have a very solid foundation." I say it is that very 2 per cent. we are anxious about. With dogged Northern perseverance, which we all admire, the splendid buildings of Belfast have been reared on 30-foot piles driven into the mud. Would those foundations be described as "very solid" if 2 per cent. of the piles were omitted—especially if it was at the corners that the omission occurred? It is the "corners" we want to be sure about in our diagnoses. Practising physicians, to make use of the test, will only want it in doubtful cases, and after it is made it will not do to ask ourselves, "Is this one of the 2 per cent.?"

I do not wish to disparage in the least what has been done, what I would be proud to have done myself, but I can consider it only a step. Unless an enthusiast, independent of his profession, turns up we can do little under present circumstances. Consider what would be required. It would be necessary, in order to get sufficient cases, that he should have the run of every hospital in Dublin, and therefore the co-operation of every physician connected therewith; that every tested case which died should have the cause of death verified by *post-mortem* examination; and, in addition to all this, a well-equipped laboratory and unlimited time at his disposal.

In the *British Medical Journal Epitomé*, Nov. 13, 1897, there is notice of an important article by Widal and Sicard reviewing the state of our knowledge on this subject, and their own conclusions based on the study of 163 cases. The conclusions are, on the whole, good.

The latest novelty has been in the line of treatment, as it not infrequently is. But in this instance the novelty opens up a wide field for research and experiment which may carry us many steps in advance of anything before. I refer to the antitoxin or serum treatment. It may be that here we have touched the penumbra of that shadow which will eclipse all other forms of treatment, not only in this but in many other varieties of disease. I believe we have not only touched it, but have already entered it. As yet, however, it is too hazy to make any calculations from it; but I believe we are on the eve of such discoveries in the treatment of specific diseases as will do much to remove the stigma that rests upon our profession—that in most cases our function is to watch the uncontrolled course of disease, endeavour to prevent complications, and treat them when they arise. Though this change will not come upon us with the swift surprise that Listerism came upon the surgical world, it will be looked back to by future generations as an epoch in medicine, just as Lister's enunciations mark an epoch in surgery. All honour to the great crowd of workers in this grand field of research, but in the number of men, the number of names applied to the method, and the number of years it is taking to thoroughly unravel the intricacies of the subject, it seems to me the tendency is to forget the master mind who first conceived that the tangled skein had an end, and quietly and diligently sought for it until he found it, hidden though it was in ignorance, prejudice, and doubt. As Prof. Richet said at the last meeting of the British Medical Association, serum therapeutics are "a direct consequence of the labours of Pasteur."[a] What more suitable title for the method that he inaugurated could be applied to it than one derived from that great name?

As yet the serum treatment of typhoid fever has been but little tested. That universal provider for all bountiful prescribers, the firm of Burroughs, Wellcome & Co., has, with praiseworthy business promptitude, supplied an anti-typhoid serum. Of course we know nothing about its mode of preparation. Some seven cases have been reported in the *British Medical Journal*[b] up to the end of 1897, in which anti-typhoid serum was used; that supplied by the above-named firm was the preparation used in all. In all the cases there appeared to be marked improvement, and finally, recovery after its use.

If this line of treatment should, in the future, yield such results as to demand its universal practice, it will be another bright jewel in the diadem of science.

Science cannot stand still, and amongst her workers our countryman, Prof. A. R. Wright, is working hard at the setting for another and brighter jewel, since prevention is better than cure.

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[a] British Medical Journal, Sept. 18, 1897.

[b] British Medical Journal.—Jan. 30, 1897, p. 259, 4 cases, Dr. Pope; Feb. 27, 1897, p. 518, 1 case, Dr. Cooper; April 17, 1897, p. 970, 1 case, Dr. Steele; July 10, 1897, p. 81, 1 case, Dr. Howlett.

In the *Lancet* of Sept. 19, 1896, he described in detail a method for the preparation of a substance for vaccination against typhoid fever. He was the first to introduce it and the first to practise it.[a] He has been working at it earnestly since, and quite lately vaccinated a batch of men at Netley who were going to India,[b] where typhoid fever is rife and where it claims a fatal power over the larger number of its European victims.

These are the newer lines in which science is now leading us. We, as practising physicians, must wait till the tools are fashioned to our hands by the workers in the laboratory. There is no reason, however, why we should not endeavour to help, and it seems to me that those who hold important positions in our public hospitals might, without any great outlay of time or money, help greatly by systematically experimenting, observing, tabulating, and then reporting results.

Thinking back on the older methods, there are very many subjects, any one of which might be made the subject-matter of an instructive discussion here. I will refer in the most general manner to two or three, avoiding particulars as far as possible.

It often happens that when certain lines of treatment are introduced or advocated by leading men, these lines are taken up by all or sundry as hobbies, and ridden to death. Thus with the depressant treatment of old; it went to such extremes that doubtless many were bled, starved, or depressed to death. Naturally with the introduction of the nutritive and stimulant treatment, the pendulum swung off to the opposite extreme, and many victims gave up the struggle for life, gorged or intoxicated. Then the stand-off treatment "took on," and men thought with awe of the ulcerated bowel seen at the last pathological gathering. They looked upon the mildest purgative as the deadliest poison.

Then master minds pointed out the value of removing undigested and putrefying material from the bowel by a dose of calomel. This was found harmless, so "Eureka!" calomel became the fashion, and was to disinfect the whole gastro-intestinal tract, and so cure typhoid like a charm. Thus the hobby romped as before.

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[a] Vide British Medical Journal, Jan. 30, 1897.

[b] British Medical Journal, Oct. 9, 1897.

Every one of these began well, contained germs of truth and good treatment, but when taken up by unthinking minds became mere hobbies, and so their grotesqueness laughed them out of court—carrying the good with them.

For example—the pendulum has swung back again to-day with many, and they dread, and so avoid anything in the nature of a purgative in typhoid fever. Murchison was not so timid. He says:—"It does not follow, however, that no interference is justifiable when the bowels are constipated. When there is constipation at the commencement of the attack it is well to commence the treatment by a small dose of castor oil, or of rhubarb in peppermint water. When the bowels are confined at a later stage I am in the habit of prescribing every second or third day one or two teaspoonfuls of castor oil, or a simple enema."

This I believe to be sound practice, though not common practice. It is, however, followed out at Cork-street Hospital at the present time. There, unless the evacuations are moderate in amount, and of normal typhoid appearance, the patient is given the day after admission 1 or 2 drachms of castor oil, or 2 grs. of calomel. Either in this small dose acts quietly, but efficiently; the dejecta are further examined, and if solid matter or undigested curd, &c., are still passed the dose is repeated. Constipation also is treated in a similar manner, allowing only one day to elapse without a motion. Thus, at any stage of the disease ℥i of castor oil, or 2 grs. of calomel are given if indicated, without fearing any ill effect whatever, whether of hæmorrhage, perforation, or diarrhœa. There is no routine in this, judgment is used in each case, and in each act of prescribing. It is routine that kills many a good practice.

Another important consideration is—the time to commence solid food. I know from experience that very various ideas are held on this subject, indeed some people seem to have no ideas on it at all, or at least follow no rule or course of practice in connection with it. Murchison is very vague on the question. He says, "Diet must be at first restricted to such articles as milk, eggs, farinacea, custards, light puddings, beef-tea, chicken tea, calves'-foot jelly. Meat must not be allowed for at least seven days after the cessation of pyrexia." Therefore, sometime within the first seven days of apyrexia he allowed eggs and farinacea.

In Cork-street, where there is a great field for observation, and where the experience of years has been condensed, the patients are given a very small quantity of solid food—viz., bread-crumb or plain arrowroot biscuit about the third or fourth day of apyrexia. The temperature is carefully watched, and if there is any rise that evening, or the next morning, the food is discontinued, and a dose of oil or calomel is given immediately. In nine cases out of ten the temperature falls that evening or the following morning, and after two or three more days food is again given without bad result. It is very seldom that a rise of temperature occurs after food given on the third or fourth day. As a general rule the amount of solids given is gradually increased daily. Anything of the nature of a true relapse is extremely rare. I really believe this to be due to the prompt clearing out of the bowel on the first appearance of a rise of temperature. I may be criticised for appearing to lay so much stress on a rise of temperature. Of the number of degrees it rises I pay but little heed; I look on it only as an indication—the earliest and most delicate, I believe—that something is wrong, and we must be "on guard."

On one occasion a patient who had very severe illness was surreptitiously given by another patient a large slice of bread and butter. That night the temperature ran up to 104°; in the morning the culprit confessed. A dose of oil was given, repeated each morning, and by the third or fourth day the temperature was normal, and remained so. I could multiply such cases. We cannot lay down hard and fast rules on this subject. I have seen food given on the second day of apyrexia without bad effect, and again have seen a regular relapse follow the first ingestion of solid food on the seventh day. Indeed, who has not seen a relapse where solid food had not been taken at all?

In private practice I think it better to be on the safer side, and leave the larger interval between fever and food. Here everything is so anxiously watched and discussed by over-anxious friends that any elevation of temperature or stopping of food once given creates such a scare that great harm is done and great blame incurred. But in hospital practice we have a freer hand—time is precious; the difference between three and seven or ten days' abstinence from solid food is a great one for the yearning patient, and is great too in speeding or retarding the restoration of strength; the bed is needed for another patient; the patient is sorely needed back to his or her family—and every day we can gain is thus important. I can well understand diversity of opinion on this point. I lay down no law, I advise no routine short cut to convalescence; but I say we must be guided by circumstances and by individuals. I have heard years ago the hard and fast rule laid down, "Never give solid food till the tenth day of apyrexia." In some cases this may be necessary, but in many cases it would amount to unnecessary cruelty.

The last subject to which I will refer is the somewhat strange one of the use of the bed-pan. It seems to be almost an article of faith that as soon as a patient is pronounced in typhoid fever he must use a bed-pan for the rest of his illness. All Murchison says about it is this, he refers you back to typhus fever, and there says—"After the first week in severe cases they ought to be provided with a bed-pan, and on no account to get out of bed." This comes into a section commencing—"Steps must be taken to prevent the patient exhausting his muscular and nervous power." I presume, therefore, that is the object of the bed-pan in typhus, but he makes no mention of it in enteric, therefore it is not clear whether he recommended its use to preserve muscular and nervous power, or to guard against the danger of perforation or hæmorrhage—probably he had all these objects in view.

There is no doubt that to many people the use of the bed-pan is exceedingly irksome. I believe that to nearly everyone it is so at first. Some find the greatest difficulty in making use of it, and except in the case of "needs must" cannot or will not do so. I remember one doctor that I attended who, though he had not enteric, had diarrhœa and such extreme weakness that we feared his sitting up. We tried by every art and persuasion to get him to use the bed-pan, he did try a few times, but, after that, persuasion was useless; he would always get out of bed to the night-chair as long as he had strength to do so.

A doctor who was ill with fever in Cork-street Hospital had a similar experience, and so hated and dreaded the trials he made to use the bed-pan that he raved about it when he became delirious, and always insisted on getting up to the night-chair.

It will surprise many here to learn that the bed-pan is seldom used, even in typhoid fever, in Cork-street Hospital. There is a night-chair beside every bed, and as long as the patient is able to get up to this he is allowed to do so. The nurse gives him assistance and covers him up. Only when unable to get out of bed is the bed-pan used; then it is found in many cases to be unnecessary, as by that time the patient generally passes all evacuations unconsciously.

The arguments in favour of the unusual practice are:—

1. Less annoyance to the patient.

2. More complete evacuation of the bowel, and therefore less frequent disturbance.

3. The more natural position causes less straining, and therefore really less risk of either hæmorrhage or perforation.

A weak patient cannot fall off the chair on account of the strong high arms, which give him comfortable support while he sits.

It will, of course, be objected that this is a ready way of courting disaster, either by hæmorrhage, perforation, or syncope. I can only say that we do not find it to be so.

I have looked up the bed cards of all cases admitted during a period of five months. During that time 92 cases were treated, 9 of whom died. Of the 83 that recovered not one had either hæmorrhage or perforation. Of those who died:—

No. I. was ill 20 days before admission; had hæmorrhage the day after admission; died 15 days after.

No. II. was ill 8 days before admission; developed double pneumonia; died 9 days after admission.

No. III. ill 14 days before admission; died within 26 hours with double pneumonia.

No. IV. ill 9 days before admission; died 10 days after, due to general severity of disease without special complication.

No. V. ill 8 days before admission; died 4 weeks after; had constant high temperature with pulmonary complications.

No. VI. ill 7 days before admission; died 3 weeks after; had very high temperature, insomnia, pulmonary complications, gradual cardiac failure.

No. VII. six days ill, at least, before admission; died 10 days after from pulmonary complications and gradual cardiac failure.

No. VIII. one month ill before admission; died 6 days after from gradual cardiac failure.

No. IX. ten days ill before admission; died 11 days after, having profuse diarrhœa and pulmonary complications.

I would apologise for giving the particulars of only five months' cases. They were consecutive months, not specially selected. As I had to search through all the bed cards for these particulars, and as the daily average number of cases in the house was about 180, it was no small labour going through all the cards of five months, it being remembered also that Cork-street is not a very convenient place to get at for a spare hour. I hope, therefore, that you will accept the examination of these 92 cases as bearing out what I say—that hæmorrhage, perforation, and syncope are very rare complications with us.

In further support of the general treatment of typhoid at Cork-street Hospital I would mention that at the London Fever Hospital from 1848–1870 the mortality was 17·26 per cent. From 1871 to 1882, after the exclusion of pauper patients, the death-rate was 15·9 per cent.; at Cork-street Hospital, from 1871 to 1890, the death-rate was 8·6 per cent., only half the mortality of the London Fever Hospital.[*]

In 1894	-	260	admitted with	20	deaths.
„ 1895	-	105	„	9	„
„ 1896	-	106	„	8	„
„ 1897	-	260	„	29	„

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[*] Dr. J. W. Moore. Eruptive and Continued Fevers.

So that the mortality with us still remains low.

There is no wish to dogmatise as to the best methods or results, but simply the desire to have them discussed by those with more wisdom and greater experience. I claim nothing in the least original in the foregoing remarks; they give simply the result of experience gained by observation of the methods and results of an institution with a very honourable record; but I would pay a tribute to the real head of that institution, Dr. J. Marshall Day, the Resident Physician, who makes that record honourable. Nor have his fourteen years of service begotten one suspicion of routine to dull the edge of his zeal, observation, industry and care, which have made Cork-street Hospital a favourite resort of our Dublin poor in their bitter hour of sickness.

ART. IX.—*Dissecting Aneurysm.*[a] By JAMES B. COLEMAN, M.D., Royal Univ. Irel.; M.R.C.P.I.; Physician to the Richmond, Whitworth, and Hardwicke Hospitals, to the National Hospital for Consumption for Ireland, and to the Children's Hospital, Dublin.

THE term "dissecting aneurysm" is applied to cases in which a partial rupture of the inner tunics of an artery allows the blood to become diffused between the coats of the vessel. Having regard to the difference of opinion which exists as to the author of the original description of this very remarkable affection, the following extract from Dr. Peacock's "Report on Cases of Dissecting Aneurysm"[1] may be of interest:—"It has generally been supposed that Laennec was the first writer who applied the term 'dissecting' to this form of aneurysm, but it has been recently shown by M. Broca that M. Maunoir employed the same designation, and clearly described the formation of aneurysms of this kind in his work published in 1802. A characteristic case is also related by Mr. Allan Burns in his work on 'Diseases of the Heart and Aneurysm,' published in 1809."

Shekelton[2] published two cases of dissecting aneurysm in 1822, and the preparations are to be seen in the Museum of the Royal College of Surgeons in Ireland. Erichsen, in the earlier editions of his "Science and Art of Surgery," incorrectly refers to this variety of aneurysm as "originally described by Shekelton," and the use of the name "Shekelton's aneurysm" as a synonym for dissecting aneurysm is not justifiable.

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[a] Read in the Section of Medicine of the Royal Academy of Medicine in Ireland, May 20, 1898.

Dr. Peacock, in the paper to which I have already referred, collected 80 instances in which the affection appeared in well-marked form, including five cases published by Shekelton,[2] R. W. Smith,[3] Kirkpatrick,[4] Lees,[5] and MacDonnell[6] respectively, in the *Dublin Journal.* An interesting specimen was exhibited by Dr. Conolly Norman at the Pathological Section of the Academy a few months ago.

In the earlier published cases of dissecting aneurysm it was supposed that the separation of the coats of the artery took place between the middle and external tunic; but modern pathologists agree that the blood almost invariably makes its way between the laminæ of the middle coat, so that the outer wall of the aneurysm is formed of the outer strata of the media together with the adventitia.

In the vast majority of cases the rupture of the inner tunics is due to their excessive lacerability—the result of atheromatous degeneration. Indeed, out of 60 of Peacock's cases the arteries were found healthy in only two instances. Von Ziegler[7] suggests that in the rare absence of morbid changes in the coats of the vessels, traumatic injury to, or defective development of, the vessel wall is the primary cause of the lesion, and Walshe[8] mentions two cases in which dissection of the aortic coats on a limited scale had been abruptly effected as the result of railway concussion. On the other hand Rokitansky[9] supposes that in some cases a morbid condition of the external coat deprives the inner coats of support, and so predisposes to their rupture.

Dissecting aneurysm is practically confined to the aorta and its large branches, although von Ziegler[7] states—on what authority I do not know—that the small arteries of the brain are a usual seat of the affection.

The internal rupture is usually situated at the origin of the aorta, or in the ascending aorta—it was so in 55 out of 73 of Peacock's cases—but it has been found as low as the end of the abdominal aorta, as happened in Shekelton's cases. The direction of the internal rupture is generally transverse when it is near the aortic valves, whilst it is more frequently vertical at the beginning of the descending aorta.

Ordinarily the arterial coats are torn asunder over one-half to two-thirds of the circumference of the aorta, although the separation of the tunics occasionally extends completely around the vessel. The longitudinal extent of the separation of the tunics varies considerably; as a rule the aneurysm is limited to the ascending aorta, but it is occasionally found to extend beyond the iliac arteries. In my case the separation of the coats begins at the arch and ends in the left femoral, and in a very remarkable case recorded by Tessier[10] the separation extended from the commencement of the ascending aorta to the left popliteal artery.

The dissection not infrequently is carried along the primary branches of the aorta; for instance, in MacDonnell's and Tessier's cases it extended through the innominate artery and its branches to the internal carotid; in another case[11] it followed the course of the coronary arteries; in Laennec's case[12] it passed along the cœliac artery, and in my case into the right renal artery.

Some of the intercostal and lumbar arteries are frequently found to be cut across by the stream of blood, "so that a probe introduced into the aortic orifice of one of those little branches passes directly into the aneurysmal canal, and traverses this before entering the artery itself, which thus appears to arise directly from the aneurysm."[13]

In cases which have ended fatally within a short time, there has been only a single opening leading from the aorta into the arterial coats, death having been usually due to the subsequent giving way of the external wall of the sac. This is the common form, comprising 73 out of Peacock's 80 cases; my case is also an instance of it. On the other hand, when life is prolonged for any considerable time, the blood is found to have forced its way from the sub-adventitious sac back again to the blood-stream at some point farther on in the course of the vessel. In such chronic cases—of which Shekelton's and Hilton-Fagge's cases were examples, the new blood-channel acquires an endothelial lining.

The disease is specially common in persons of advanced age, and though it probably occurs more frequently in men than in women, there is not the excessive preponderance in males which is the rule in ordinary aneurysms. Indeed some writers say that it is more common in women.

The case which I now relate, and the specimen which I exhibit, typically exemplify the symptoms and pathology of the early stage of the fully-formed dissecting aneurysm.

CASE.—A man, sixty-five years of age, a house-painter by occupation, was admitted to the Whitworth Hospital under my care on 13th Jan., 1898, complaining of severe pain in his back and of loss of power in his legs. On the morning of his admission to hospital he was on a ladder engaged in papering a room when he was suddenly seized with a violent pain in the lower part of his back and in his left hip. The pain appeared to start from his lumbar region and to shoot up into his chest and down to his left thigh. It was so intense that (to use his own expression) he "bellowed with agony." He felt faint, but did not lose consciousness, and he was able to walk across the room with difficulty to a chair. Within a quarter of an hour his lower extremities were completely paralysed, and his left leg was anæsthetic. He was removed to hospital in a few hours. Beyond the fact that he was a painter, there was nothing noteworthy in his personal history, and he came of a healthy family. On admission to hospital he was a well-nourished, grey-haired old man, rather anæmic. He was unable to walk, but he could move his legs slightly. He still suffered from severe pain in his back, but he had already recovered sensation in his left leg. Everything he ate or drank was vomited. His arteries, in which there was visible pulsation, were atheromatous, and his pulse high tensioned. Heart was hypertrophied; no murmurs could be detected, but aortic second sound was accentuated. He was carefully examined for aneurysm, with a negative result. Pulsation could be felt in both of his femoral arteries. There was marked *arcus senilis*, and his gums showed a "lead line." His urine was feebly alkaline, sp. gr. 1014, clear, contained ·2 per cent. albumen, and a few hyaline and granular casts; neither sugar nor blood was present; the quantity of urine passed was about the average amount. He had control over the sphincters of bladder and rectum. Knee-jerks and plantar reflexes were lost.

The pain in his back ceased after twelve hours, and next day he felt much better, and he was able to move his legs freely. On the following morning he was able to walk a few steps, and he expressed himself as feeling almost quite well. At this period I showed him to the hospital class, and I diagnosticated the case as plumbism and chronic interstitial nephritis, with the usual cardio-vascular changes. I pointed out that the history of the attack clearly indicated some vascular lesion of the spinal cord, and the sudden onset, wide diffusion, and intensity of the pain, together with the transient duration of the paraplegia, appeared to justify the further diagnosis of spinal meningeal hæmorrhage. The patient was apparently well about four o'clock in the afternoon, when he took a drink of milk. Five minutes afterwards the nurse found him dead in his bed. His death occurred about fifty-two hours subsequent to the onset of the symptoms.

The *post-mortem* examination, which was made within twenty-four hours of his death, showed the right pleural cavity to be filled with blood. The pericardium contained a little clear serous fluid. The heart was rather large, there being hypertrophy of the left ventricle. The arch and upper part of the descending aorta were distended and formed a tumour-like mass, from which the blood had escaped into the right pleura. On opening the aorta its inner aspect was covered with atheromatous plaques, and a dissecting aneurysm extended from the arch, at the level of the innominate artery, and terminated in the left femoral artery about an inch below Poupart's ligament. A large mass of freshly-coagulated blood was effused between the tunics at the level of the arch and in the upper portion of the descending thoracic aorta, and here the separation of the tunics took place around nearly the whole circumference of the vessel wall. From the abdominal aorta through the left common iliac, external iliac, and femoral artery the coats of the vessels were separated by a thin layer of coagulum, but no palpable thickening of the arteries was so produced. In the lower part of the aneurysm the dissection of the arterial coats did not extend much more than halfway around the circumference of the vessels.

The microscopic sections, which I exhibit, are from the left common iliac artery, and they show that the blood is effused in the substance of the middle tunic of the artery, so that the external wall of the aneurysmal canal is composed of the outer muscular strata of the media together with the adventitia. The dissection was carried along the coats of the right renal artery, the lumen of which was also occluded by a thrombus. The lumbar arteries were cut across, and their orifices likewise contained thrombi. A large coagulum was adherent to the posterior wall of the aorta at the level of the renal and lumbar arteries.

The external rupture of the aneurysm was situated about the middle of the thoracic aorta on its posterior aspect. The rupture was an ill-defined, oblique slit, about half an inch long, from which the blood had forced its way through the connective tissue into the right pleura.

I have not been able to satisfy myself as to the position of internal rupture. It might have occurred two or three inches from the termination of the abdominal aorta, for the atheromatous changes were most intense in that position, or possibly it took place at the origin of one of the primary branches of the aorta.

Both kidneys were cirrhotic, the right one being, in addition, cystic and extremely engorged with blood. Microscopic sections of this kidney (prepared by Dr. Dargan in Dr. McWeeney's laboratory) show that it is in a condition of universal hæmorrhagic infarction. There was no hæmorrhage in the spinal cord or its membranes.

In the light of the autopsy it is not difficult to account for the symptoms of this case. As predisposing causes of dissecting aneurysm my patient had extensive atheroma of the inner coats of his aorta, which were consequently unduly lacerable, and, in addition, he had hypertrophy of the left ventricle with high arterial tension. The intense pain at onset of the symptoms was due to the primary rupture and separation of the coats of the aorta by the blood; the paraplegia was caused by the interference with the arterial supply to the lumbar enlargement of the cord, partly from thrombosis, partly from rupture of the lumbar arteries; the sudden death ensued on the rupture of the external wall of the aneurysm and the consequent escape of blood into the right pleura. It is rather remarkable that his urine contained no blood, and that the amount passed was not noticeably diminished, for the right kidney was engorged with blood, and its secretion must have been completely arrested.

Other cases of dissecting aneurysm have been recorded in which a remarkable series of symptoms was due to arrest of vascular supply to the brain, kidneys, or cord.

Tessier's[13] patient died with the symptoms of apoplexy, and a dissecting aneurysm was found extending from the arch of the aorta along the innominate artery and its branches to the internal carotid.

Todd's case[14] was characterised by hemiplegia and transient suppression of urine, and the *post-mortem* examination showed softening of the brain due to obstruction in the carotids, and it is probable that there was also obstruction in the renal arteries.

Sainet[15] records a case in which the patient became rapidly paraplegic.

Latham and Swaine's[16] case was diagnosticated during life. The patient was suddenly seized with "agonizing" pain in his chest followed by paraplegia.

In Dickenson's[17] case a policeman, after seven hours on his beat, was seized with loss of power over his lower extremities, followed by pain and collapse. Death took place within 24 hours.

Where the symptoms are liable to such variation, it is evident that the diagnosis of dissecting aneurysm must always be difficult and uncertain.

In reference to treatment, Walshe[8] somewhat cynically remarks, "Were the practitioner fortunate enough to divine the occurrence of acute separation of the coats of the aorta, it does not appear that in the present state of our knowledge the management of the case would be materially improved by his sagacity. Did he fail to diagnose the occurrence, his aim would be to restore the patient from the first shock of the accident, control excited arterial action, and relieve symptoms as they arose. And it does not appear that art could do more than this were the anatomical nature of the affection understood from the first."

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A CHARMED LIFE.

Dr. Crawford (*Indian Medical Gazette*), in his article on gunshot wounds, reports the following case:—Sepoy Jagat Singh, 31st Punjab Infantry; age, thirty-five; service, eleven years. Wounded at Agrah on the 30th September [1897], and admitted here on the 19th October. Seven bullets entered at the outer side of the back of the right thigh and, travelling horizontally, came out on the inner side of the back of the thigh, causing a simple flesh wound. On admission here the track of the bullet was healed. He was discharged on the 19th November, and sent on two months' sick leave.

THE CONGENITALLY BLIND AS OUTLOOK-MEN AT SEA.

The frightful catastrophe of the sinking of the SS. *Bourgogne* reminds us of a lecture delivered some years ago by Dr. Dufour of Lausanne. This celebrated oculist, interested in the means of securing a livelihood for the unfortunate blind, passed in review all the callings which might make use of the extraordinary power of hearing with which these persons are endowed. Among others, he declared that all swift vessels should have on board two men born blind to serve as outlook-men in foggy weather. Dr. Dufour declares, as a result of experiments made on the Lake of Geneva, that the acuteness of hearing in these persons is such that they can easily recognise at a great distance the noise of a moving vessel, and *à fortiori* the acoustic signals which it may make with the object of furnishing exact information as to its position and course. The suggestion is a valuable and a practical one.—*Lyon Médical*, July, 17, 1898.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

William Stokes; His Life and Work (1804–1878). By his Son, WILLIAM STOKES, Surgeon-in-Ordinary to the Queen in Ireland. London: T. Fisher Unwin. 1898.

IN the opening sentence of the preface to this biography, the writer "being to a great extent at a disadvantage, as a son must always be who attempts a biography of his father," appeals to the indulgence of the reader to enable him to look with a tolerant eye on the pages of the work before him. We can answer for at least one reader, who regards the modest but appreciative thoroughness with which he has carried out his peculiarly difficult task, as one of the most striking pieces of evidence that could well be produced of the tastes and aspirations in which he must have lived and moved while under the guidance of his noble and highly-gifted father. Could the spirit of William Stokes be permitted to look down upon the scenes of his former earthly exertions, we venture to say that one of its keenest gratifications would consist in observing the continued maintenance of the lofty standard of artistic, moral, and social tastes which must necessarily constitute the highest tribute to the educational methods adopted in the paternal home at Merrion-square, N., Dublin.

Heroes of all types are very much be-written in this extremely practical, scientific, money-making, but, alas! deplorably *un*-heroic age. The great warriors who committed most murders, the great statesmen who most successfully swindled all rival nations, the great educators who most skilfully fettered and tortured the youthful intellect, the founders of the great religions who manufactured the largest lies with the most natural ease and vigour, have all been recently receiving their due share of attention and applause. The "Masters of Medicine" are now honoured with a few grains of appreciation, and the leading representatives of the one profession which was practised and blessed by the Saviour of mankind are permitted to follow in the train of the greatest spoilers of their species. The name of William Stokes adorns the title-page of the fourth of the very tastefully-produced volumes of this series; which, like its predecessors, does credit to the taste of the eminent publisher, T. Fisher Unwin, and, we may add, to the skill of his printer and of his bookbinder. This volume includes 256 pages, and is embellished by three illustrations—a frontispiece of the statue by Foley, a reproduction of Sir Frederick Burton's drawing of Dr. Stokes, and one of St. Fintan's churchyard, where rest the earthly remains of the subject of this memoir. The latter bears the inscription, *Margaret Stokes Pinx^t*—a contribution of the accomplished daughter of William Stokes to the memory of her honoured father. The text is divided into thirteen chapters. There is an appendix which contains a bibliography of Dr. Stokes's writings, and a letter written from St. Louis, Mo., by Thomas O'Reilly, M.D.—formerly one of his pupils at the Meath Hospital. This document refers to the death of the erratic Irish genius, Clarence Mangan; the closing hours of whose unhappy life were soothed by the benevolent care of Dr. Stokes.

"William Stokes, the subject of the present memoir, belonged to a family members of which have for five generations occupied more or less prominent positions in the public life of Ireland." It is interesting to note at this date that Gabriel Stokes, the founder of the Irish family of this name, who was an engineer by profession and lived in Dublin from 1680 to 1721, published "A Scheme for effectually supplying every part of the City of Dublin with pipe-water." The high reputation which this gentleman made in his adopted country has been well and truly maintained by his descendants during the past two centuries, throughout the entire period of which they have been prominent representatives of the progress of Science, Literature, and Art, both in Ireland and in Great Britain. Whitley Stokes, the father of the "Master of Medicine" with whose

"Life and Work" we are now immediately concerned, was, in the early years of this century, a Senior Fellow of the University of Dublin, a Professor of Medicine in the Royal College of Surgeons in Ireland, a conscientious nonconformist in religion—for which he suffered the loss of his Fellowship in the University, and a true Irish patriot, who loved his country too well to wish to soil the pages of her annals with a further record of bloodshed. "What he would highly, that would he holily," was the spontaneous tribute paid to his moral worth by Theobald Wolfe Tone, who testifies in a letter to a friend—"I look upon Whitley Stokes as the very best man I have ever known." We think it desirable to mention these facts and observations in order to give our readers some idea of the exceptionally inspiring influences under which the early years of William Stokes's life were spent.

The boyish years of the future apostle of medicine were distinguished by his love for poetry and romance, and by his apathetic indifference to distinction in the usual school exercises, and to the athletic games and field sports by which the large majority always prefer to cultivate the muscular system, of whose availability they are sure, to the neglect of the intellectual, whose existence is so often visionary. The love of Walter Scott and of the romances which he collected and which he originated, began almost with the beginning, and ended only with the end, of the active life of William Stokes. Human nature always hankers most after what cannot be reached, and the history of Stokes's own life and works forms the most instructive comment on the want of that "University training" which he regretted all through life. No Jewish University conveyed to King Solomon his all-comprehending knowledge, nor did a corresponding Greek establishment give to Aristotle the attainments by which he gained a two-thousand-years' lease of the intellectual monarchy of the world. Is there any evidence that William Shakespeare ever even *once saw* the inside of a University? How much had "University training" to do with the authorship of what are probably the most enduring prose works of our language—"*The Pilgrim's Progress*" and "*Robinson Crusoe*"? The only prominent fact which history has recorded of the University life of Francis Bacon was that its experience gave him a a rooted dislike to the philosophical teaching of his time, which it became the labour of his life to overturn. The greatest metaphysical work of the English language bears on its title-page the honoured name of John Locke, *Gent.*, *not* John Locke, M.A., although the author was a University graduate. The want of an Oxford degree—where his fourteen months of residence are described by himself as "the most idle and unprofitable of my whole life"—did not in any way prevent Edward Gibbon from rearing the most magnificently monumental landmark which the literature of history can show. And although Charles Darwin had the advantages of a University course, it most certainly was not by working along the lines of its "training" that he succeeded in formulating the theory by which he was able to thunderstrike all the educational institutions of his generation, from his own Alma Mater down to the smallest village school. And the want of a "University training" did not prevent William Stokes from becoming the ὁ ἐκεινος of Medicine in his day; an ideal ambition at least quite as successfully gratified as was the famous visionary choice of the Greek philosopher.

The fact that chemistry appears to have been the first of the physical sciences to attract the youthful attention of William Stokes is significant testimony to the existence of the faculty of observation and the curiosity to pry into the secrets of nature—both of which are brought so prominently into action by this science.

In Edinburgh, where he went to prosecute his medical studies, he was "stimulated by the magnetic influence of Professor Alison"—an influence which appears to have lasted through life; and the interesting anecdote (pp. 31–2) in which we are told how the unknown student volunteered to accompany the poor and helpless fever patient to his home, is happily illustrative of the sympathy and devotion to his professional work with which the young Stokes was even then inspired.

A phenomenal fact in the history of our student is that when the stethoscope was new, and—the old, old story—a good deal sneered at by the successful senior members of the profession, William Stokes, then aged twenty-one, published in Edinburgh a small treatise on the use of the instrument whose invention absolutely revolutionised the diagnosis of thoracic disease. The medical student Stokes became the apostle of the stethoscope to the English-speaking world! This small slip from the growing tree of knowledge waxed great; and blossomed in after years into the clinical classics—"Diagnosis and Treatment of Diseases of the Chest" and "Diseases of the Heart and Aorta," in which the gifted author was able to supplement and expand the observations of the inspired inventor of the stethoscope, supply many of his omissions, correct inevitable mistakes, and furnish the best possible commentary on his own remark on the use of this instrument, that it was "not as was formerly supposed, a means of forming a useless diagnosis in incurable disease, but one in which the ear is converted into the eye."

In this same year (1825), Stokes obtained his degree in Edinburgh, returned to Dublin, and received the appointment of Physician to the Dublin General Dispensary. In the following year he was chosen Physician to the Meath Hospital; which, accordingly, from this date formed the central arena of his professional work. Here William Stokes was exceptionally fortunate in having for his colleague Robert James Graves, in association with whom was initiated and carried into practice "a system of clinical instruction till then unknown in this country, which eventually acquired a world-wide fame for the Dublin School of Medicine." The author of the memoir before us tells his readers how the success of those gifted and enthusiastic teachers of medicine was so great that "crowds of students not only from other British Schools, but also from the Continent and America, attended the Meath Hospital clinique." From the surviving reputation of Graves and Stokes, and their imperishable contributions to the literature of medicine, we would be led to believe that the healthiest type of instruction was conducted by the bedsides of their patients. "The principle in the new system of clinical teaching was diametrically opposed to that adopted by the 'grinders' or 'crammers' of the past as well as of the present day." Alas for the shortcomings of the professional intellect and its attainments! The writer of this review has had some personal experience of "grinding," during which he was often obliged, in the conscientious discharge of his duty, to correct the mistakes of an *un*-inspired clinical teacher, while preparing a pupil to receive the attentions of an examiner who was not unfrequently the most ignorant of the three seniors.

The conscientious and nervous energy which the young physician bestowed on the preparation of his first lecture is vividly portrayed in an extract from a letter bearing date April 15, 1826. From this time the career of William Stokes was an upward and onward one in the profession to which he had devoted his life. No exertion, physical or intellectual, was spared to bring him daily nearer the lofty goal which he had originally prefigured for his future. He never rested satisfied with present attainments; he went on adding culture to culture, and piling knowledge upon knowledge. He addressed his hospital pupils as fellow-students. We read of continuous daily work from half-past seven in the morning till twelve at night, complicated by the prevalence of a raging epidemic of typhus fever. We read of still unflagging devotion to the charms of poetry and romance, of architecture and painting, of music and the drama; to the beauties of landscape scenery, to the dreamy investigations of the archæologist, and to the social accomplishments of the *raconteur*. The many-facetted and highly-polished intellect of William Stokes was equally ready to receive and to reflect the brilliancy of genius as portrayed in the inspired Madonna of Raphael and the living impersonations of Helen Faucit, the dramatic mirrors of humanity bequeathed to us by William Shakespeare and the soul-stirring Scottish minstrelsy collected by Walter Scott, the simple structural grandeur of an Irish Round Tower and the exquisite Gothic network of the Antwerp Cathedral spire, which is said to have temporarily overpowered the senses of those mighty rulers of the earth—the Imperial and unprincipled religionist, Charles V., and the Corsican brigand, Napoleon Buonaparte.

Although not an active patriot in the epidemic sense to which the Johnsonian definition of patriotism is so truthfully applicable, Stokes perceived and mourned for the woes of his country, felt the fiendish injustice of the penal laws, and sympathised most keenly with the movement for Catholic Emancipation.

The details of advancement which medical education in Dublin received from William Stokes are too numerous to be even alluded to *seriatim*. His advocacy of Preventive Medicine, like many of his other spoken and written opinions, has turned out to be actually prophetic. The Diploma in State Medicine of the Dublin University was established as one of the results of his nobly philanthropic exertions; the establishment of the Dublin Sanitary Association was another. He defended the doctrine of the unity of Medicine and Surgery, and advocated the creation of corresponding degrees in the latter—a movement which has also had the best results.

His personal code of medical ethics was so high and noble that we must ever regret that he was unable to complete a projected work on this subject. We unhesitatingly say that every member of the profession would have been the better for the perusal of Stokes's fully-expressed ideas on this inspiring theme.

It would be but an idle—indeed, a presumptuous—waste of time and energy to attempt to examine in detail the vast number of important items of original research which have been contributed to the common stock of professional knowledge by the pen of our illustrious fellow-countryman. Merely a small portion of them have been even noticed in the pages of the memoir before us; but every reader of this journal should be acquainted with all of them. Microbes may come and microbes may go—some of us often pray that they soon may—and the same can be said of the toxins, ptomaïns, leucomaïns, &c., &c., which so profusely decorate the pages of our current clinical and pathological text-books; but so long as the human frame preserves its distinctive characteristics, we venture to prophesy that Stokes's classical descriptions of the symptoms which he was the first to perceive, and the most eloquent to portray, will never lose their value for the clinical observer.

We congratulate the worthy son of a highly-gifted father on the way in which he has carried out the peculiarly delicate task which has been allotted to him. We would like to use more demonstrative language; but the example of true taste and delicacy of feeling which he has set us, and which we hope not soon to forget, makes us hesitate to say all that we would like to. We will only add—in concluding this notice of an inspiring life-history—that there is one name which will ever "echo down the corridors of time" as the Irish representative of the medical and surgical departments of the healing art for two generations of this, the most progressive of all the centuries, and that name is William Stokes! The respective owners of that name have borne the standard of advancing philanthropic science in Ireland, with the most comprehensive and far-reaching results, corresponding to those attained in France by Laennec, and in Great Britain by Simpson and by Lister.

Outlines of Practical Surgery. By WALTER G. SPENCER, M.B., M.S., F.R.C.S.; Surgeon to the Westminster Hospital. London: Baillière, Tindall & Cox. 1898.

THE delightfully short and admirably instructive preface with which the author introduces this volume to his reader includes but the three following short sentences:—"As the title indicates, this book on Surgery is limited to Practical Subjects. Details of Pathology and Bacteriology are best dealt with in special works. The same remark applies also to Ophthalmic Surgery."

The worried reviewer, sated with the examination of prefaces and texts, is at once prepossessed in favour of the good sense and sound judgment, as well as modest dignity, of the at least semi-inspired author of this exemplary "Foreword."

This handsomely bound and extremely well-printed volume is produced in the best style of the admirable series with which the eminent publishers, Messrs. Baillière, Tindall & Cox, are now preparing for the shelves of the student and the practitioner. This handsome octavo of x and 694 pages, embracing as it does the whole range of practical surgery, with the small exception mentioned in the preface, is necessarily limited in the space devoted to any one of the enormous number of subjects which it embraces. Accordingly none of these can be said to be exhausted. But it gives an admirably outlined chart to guide the student in his reading, and to function as an *aide-mémoire* for the busy practitioner. We have no doubt that the author specially intended it to fulfil these purposes, and we cordially congratulate him on the way in which he has completed his self-imposed task. We know of no introductory guide-book to the ultra-labyrinthine mazes of practical surgery which we can so unreservedly recommend to the attention of the medical student and busy practitioner.

Manual of Operative Surgery. By H. J. WARING, M.S., M.B., B.Sc. (Lond.); F.R.C.S.; Demonstrator of Operative Surgery, and Surgical Registrar; late Senior Demonstrator of Anatomy, St. Bartholomew's Hospital, &c. Edinburgh and London: Young J. Pentland. 1898. Crown 8vo. Pp. 550, with 400 Illustrations.

THIS is an admirable book and we intend to recommend it to students, as, indeed, we have already done. The matter is well selected and the style clear and succinct. The anatomical descriptions and references are everywhere accurate, and we venture to suggest that still more anatomy might be safely instilled into future editions.

The author has been very wise in his arrangement of the book, placing the operations in that order which is likely to be adopted in an ordinary course of instruction on the dead subject. It is scarcely in harmony with the general plan to divorce Estlander's operation from operations on the pleura, and ligature of the middle meningeal artery and exposure of the lateral sinus from operations on the cranium. We do not agree with the author in regarding silk as the best ligature material for large arteries, and it is open to question if it is well to teach that the ligature should rupture the middle and inner coats of the vessel.

The figure which illustrates amputation of the thumb does not accord very closely with the description in the text.

The illustrations of frozen sections of the abdomen on pages 141 and 147 are not quite as good as we could wish.

These are all, however, very minor points, and we would scarcely have drawn attention to them were it not that we feel a personal interest in the book for the reason that it is our intention, as already stated, to strongly recommend it as a text-book to students who may consult us in the matter.

A Manual of Operative Surgery. By LEWIS A. STIMSON, B.A., M.D.; Professor of Surgery in the University of the City of New York, &c.; and JOHN ROGERS, jun., B.A., M.D.; Assistant Demonstrator of Anatomy, Columbia College, New York, &c. Third Edition, with 434 Illustrations. London: H. K. Lewis, 136 Gower-street, W.C. 1897. Pp. 594.

THIS book is, we presume, intended, mainly at least, for students. Before expressing any view as to its merits it will be advisable to state what we consider we have a right to expect from any teacher of operative surgery. In the first place we, of course, look for a clear account of the operations themselves, special emphasis being placed on such details as apply to work upon the cadaver. The selection of methods is a most difficult and at the same time important element in this part of the subject. Secondly, we expect to find much attention given to anatomy, for, we believe, a lecturer on operative surgery has a great opportunity of adding much to a student's knowledge in this respect—indeed, we feel almost disposed to regard a course in operative surgery as an advanced course in surgical-applied anatomy. A third factor which requires as careful treatment as the two preceding is the general surgery directly associated with the various operations. We can conceive of no more difficult task than to give to each of these elements of the subject its appropriate place.

In the present book we think that the detail of operation has been allowed to overshadow both anatomy and general surgery. The anatomical descriptions are not, in our opinion, satisfactory as a rule, and in some instances would sorely puzzle an English student. As an example note the following:—"Hunter's Canal; this name being given to the condensed sheath for a short distance above and below the point where it passes through the tendon of the adductor magnus."

In the accounts given of the anatomy of the arteries no mention is made of the collateral circulation. Why not? The indications and other matters of general surgical interest closely related to the operations are, as a general rule, unnoted. As we have already said, we think these matters should have a place, and the omission of them is one cause of want of attractiveness and vitality in the book. Surely nothing can excuse describing such an operation as craniectomy without giving some idea of the purpose of it. This particular procedure might, indeed, safely have been omitted from so small a volume; but that is another matter and leads us to the last point to which we would draw attention. If the book is intended, as we have assumed, for students the selection of operations should have been influenced by some such considerations as the following:—

Does this or that operation illustrate any important principle of surgical practice? Does it possess intrinsic practical importance, as is the case, for example, with tracheotomy? May it tend to develop manipulative skill (and this consideration will justify the inclusion of operations, such as pylorectomy, which have no other distinctly practical bearing)? Will it serve to impress on the student some important anatomical fact?

It must have been some consideration other than these which led the writers of this book to devote forty pages to plastic operations on the face, or fourteen to the plastic surgery of the urethra, and to dismiss amputation of the breast in considerably less than a single page. No better opportunity than that afforded by a discussion of this particular operation could be found to point out the principles which govern modern surgical procedure in the attempt to eradicate cancerous disease. No use has been made of the opportunity here, and it is, we think, an unfortunate fault throughout the book that not enough is written to enforce principles and too much to describe details.

We have dwelt much on what we conceive to be the shortcomings of the work; but, of course, it contains a great deal that is excellent—enough to more than explain the necessity for a third edition.

RECENT PAPERS ON DISEASES OF CHILDREN.

1. *De la Paralysie Générale Progressive dans le Jeune Age.* Par le DR. CHARLES THIRY, Nancy. Paris. 1898.
2. *Transactions of the American Orthopædic Association.* Vol. X. Philadelphia. 1897.
3. *Transactions of the American Pediatric Society.* Vol. IX. Washington. 1897.
4. *Pediatrics.* Vol. V. Nos. 1 to 12. January to June, 1898 (fortnightly). New York and London.
5. *Archives of Pediatrics.* Vol. XV. Nos. 1 to 6. January to June, 1898. New York.
6. *Baby Feeding; or, How to Rear Healthy Children.* Advice to Mothers on the Rearing and Management of Children. Specially written for the Wives of the Working Classes. By a Doctor. Bristol: John Wright & Co. 1898.

1. General Paralysis of the Insane in children is an extremely rare and interesting disease. This is a beautiful and valuable review of all the available cases which have been truly and authentically published since 1877, occurring under twenty years of age. There are altogether 69 cases published, with clear and distinct notes of each. In 27 of these cases the disease was discovered in children under 14 years of age, and affecting all the periods of childhood down to 8 years, when the youngest case commenced, and died at 10 years. The fullest notes and most careful *post-mortem* details accompany this case, as also most of the remaining ones. To any one interested in this disease a most valuable fund of information is supplied by M. Thiry,

and at the end of the monograph is a series of beautiful plates of *post mortem* and microscopic appearances.

It is highly deserving of a good English translation.

2. These well-printed Transactions contain some interesting papers, amongst which are notably the following:—

(*a*) "The Prognosis of Hip Disease under Efficient Treatment." By LE ROY HUBBARD.

(*b*) "An Examination of the Human Gait." By E. H. BRADFORD.

(*c*) "Round Shoulders."

(*d*) "Measurements in Curvature of the Spine." By G. W. FITZ.

These will repay perusal, and are deserving of such publication.

3. These Transactions of the American Pediatric Society are for the most part of good value. The following are specially interesting papers:—

(*a*) "The Evolution of Literature on Diseases of Children in the United States." By S. ADAMS. Setting forth chronologically the various works appearing there since 1789, when Benjamin Rush first wrote on influenza.

(*b*) "On Epistaxis in Childhood."

(*c*) "Varicella Gangrænosa."

(*d*) "On Cerebral Abscess in Infants." By EMMETT HOLT.

4. *Pediatrics*, Vol. V., contains an interesting paper by Thos. Dolan on "Whooping Cough;" a Memoir, with portrait of the late Dr. Joseph O'Dwyer, of New York, the originator of "Intubation" in Diphtheria; and an elaborate paper on "Thermic Fever" in infants, in which the author holds that "Summer Diarrhœa" is in reality due to "Insolation" or "Sunstroke." We cannot, however, agree in this unqualified statement, though we fully recognise the undoubted connection between "Infective Diarrhœa" and warm weather. Other interesting

papers are—"The Hygienic Management of Dairies," by Dr. Brush, of New York; "The Municipal Control of Milk Supply in Cities," "Chronic Intestinal Indigestion," "Acute Gastro-enteritis," "Whooping Cough," and "Paralytic Imbecility," by Dr. Telford Smith.

5. *The Archives of Pediatrics* is an exceedingly well got up journal on diseases of children. We are at present not acquainted with any better. It emanates monthly from New York, and Vol. XV. contains the following valuable papers:—"Chorea," "Tetany," "The Diagnostic Value of Pain in Infancy" and "Habit Spasm," "Habitual Constipation in Infancy," and "Incontinence of Urine in Children," by M. M. Rochet and Jourdanet, of Paris.

This journal points in the right direction, but we think it would look much nicer and more high-class if advertisements were suppressed from the front of the cover.

6. *Baby Feeding.*—"To the many children who, through the ignorance or wilfulness of their mothers, have been doomed to a life of ill-health, misery, and poverty, this little pamphlet is dedicated, in sincere sympathy and with the earnest desire to show that even the poorest mother can bear a healthy child, provided that she knows how to do so, for no woman has a right to have a child unless she knows how to rear a child."

Our anonymous writer, who is a graduate of Dublin University, has given us some good pages on this subject.

The first chapter is a wholesome sermon or address to women. Ruskin is called in to aid our author in a eulogy of what good women might be; and he then proceeds in addressing mothers:—"Do you know that nearly all the delicate, wretched, unhealthy men and women on this earth are largely your products? They may have been born fine healthy children; but their mothers neglected them, they fed them improperly, starved them body and soul, and the result is that at the end of this nineteenth century, man, instead of being the strongest of animals, is the weakest and feeblest being in creation.

"Is it not time your slumbers were ended, and you awoke to the full sense of your duties? Look around at your handiwork, and see here a child blind at birth, due to want of cleanliness! Here a wretched bow-legged infant, with 'rickets' caused by bad feeding! Here a poor idiot with 'water-on the brain' from the same cause. Awake! and see that such sights are banished from among you. Remember this: you may only be a working man's wife; yet with the wages of a working man you ought to be able to rear strong, healthy children. Nature—or shall I say, Providence—has ordained that you should feed your offspring from the product of your own body. Nature has given you milk, and on this she intends you to rear your young, and in order to do so you have only to feed yourself, nature will do the rest. Learn to follow nature, learn to watch her, and to do as she tells you; and when she gives your child teeth wherewith to chew its own food she intends you to cease suckling the child, and to provide it with food more suitable to its altered conditions; it is then wanton waste to go on feeding it on your own life blood," &c., &c.

Chapter II. reminds mothers, amongst other things, that the stomach of a young infant is not larger than "an ordinary hen's egg," and that "the only point in a baby's anatomy which a mother ought to know is the size of its stomach, so that she may not overfeed it."

Chapter III. contains sound advice on "the proper food for infants."

Chapter IV. treats of "The New-born Baby."

Chapter V. on "Weaning."

Chapter VI. contains a list of dangers to be avoided. Some of these fall very wide of the subject of the book; for instance, "Do not marry till you are at least twenty years of age!" is rather *mal àpropos.*

We think, after carefully reading over these pages, that they are much too "high class" for labouring people to profit by. They are much better fitted to instruct ladies and mothers in the higher grades of social life, and might be with benefit circulated amongst them.

As to the pamphlet itself, we think the cover and the style of print outside are objectionable. They detract from its merits. At first sight, one is inclined to throw it aside into the waste paper basket, for its appearance is against it. Our anonymous friend should, if a second issue comes to light, see that his most useful pages are encased in a more attractive envelope. Books of this kind for public use are dangerous volumes to write, but our author has exhibited considerable tact and judgment. Moreover, he has at least made himself acquainted with some recent valuable papers on Diseases of Children, which is much to his credit, as it is to that of his volume.

An Atlas of Histology for the use of Students; being a separate issue of the 174 *Original Coloured Illustrations from a "Text-book of Histology."* By ARTHUR CLARKSON, M.B., C.M. Bristol: John Wright & Co. 1898.

A SHORT time ago we had the pleasure of calling the attention of our readers to the valuable Text-book of Histology by Mr. Clarkson, and of noticing particularly the extreme beauty and artistic excellence of the plates with which this work was illustrated. The author has now conferred a great boon on students and others whose means are limited by publishing the plates of his book separately as an Atlas, at the very moderate price of nine shillings. The very handy volume consists of 88 plates, containing 174 coloured figures, with explanatory text. It is one which cannot be too highly recommended to every one who is engaged in practical histological work.

A Treatise on the Pathology, Diagnosis, and Treatment of Neuroma. By ROBERT W. SMITH, M.D. London: The New Sydenham Society. 1898.

THIS remarkable work was published in a very small edition in 1849, is now in the hands of very few, and is very difficult to obtain. Its value is far too great to allow it to remain out of print, and therefore the New Sydenham Society has acted wisely in undertaking its republication as a part of the valuable Atlas of Illustrations of Pathology. As said by the editor in his preface, "So carefully recorded are the observations that their value is as great as at the time of original publication, and the reader will be struck by the practical absence of anything that seems antiquated."

Neuromatous tumours are divided by Professor Smith into spontaneous and traumatic. The former are usually single, and when so are painful, but when multiple are usually free from pain. The traumatic are almost always extremely painful. The general characters and symptoms of idiopathic neuroma are described in a masterly manner, and with a clearness and conciseness that will be familiar to those who have had the privilege of attending Professor Smith's lectures, or who have read his other works, and which might be well taken as a model by many modern writers. The diagnosis of painful neuromatous tumours is thus summed up:—"The oval or oblong form of the tumour, its being moveable from side to side, but not in the direction of the nerve upon which it is placed, the attempt to move it in the latter direction being productive of severe pain, its freedom from adhesion to the surrounding structures, the healthy condition of the integuments, the extraordinary sensibility of the tumour, the peculiar electric character of the pain, its terrible severity, paroxysmal type, and extension along the trunk and branches of the nerve, constitute a group of symptoms which, in the majority of cases, are sufficient to establish the true nature of the tumour."

In the treatment, which is entirely operative, the attempt to dissect the tumour away from the nerve is condemned except in very exceptional cases. Excision of the tumour and of the piece of nerve from which it grows has in many cases been followed by the happiest result. Not only has the pain been removed, but after a time the functions of the parts supplied by the divided nerve have been completely restored. This has been the case in removal of tumours of the ulnar, median, posterior tibial, and even the sciatic nerves. Many cases from the author's own practice and from that of other surgeons are recorded, illustrating the good results of this method of treatment. As a permanent result, following division of the nerve, Dr. Smith notices a peculiar coldness of the part supplied by it.

In the section on multiple neuromatous tumours some cases are quoted from Descot, Schiffner, Wutzer, Knoblanch, and Barkow. In most of these the patients were idiotic or insane, or suffered from organic disease of the brain. But this was not the case in either of the two remarkable instances of multiple neuromata observed by Professor Smith himself, the accurate clinical histories and autopsies of which are the chief features of this remarkable treatise. The beautiful dissections of the nerves in these cases, and the admirable casts, illustrating the appearances both before and after dissection, will be remembered by all the old students of the Richmond Hospital. They were among the treasures of the museum of that institution, but are now, unhappily, buried in the lumber-rooms of the Royal University, where no one can see them or make any use of them.

Multiple neuroma, where the tumours are very numerous, is a very rare condition. Virchow, in his Onkologie, states that there are only 30 cases on record; he himself had never seen a recent case. Dr. Smith had occasion to observe two cases within the same year, and gives a most complete account of them, illustrated by very fine drawings. They were both men between thirty and forty years of age; in both the disease had lasted a considerable time. One died of marasmus, the other of gastro-enteritis. In both nearly all the nerves were occupied by tumours of various sizes, from those scarcely perceptible to some that were of very large size. One, on the left sciatic nerve of M'Cann, "occupied the posterior surface of the nerve from the lower margin of the glutæus maximus to within four or five inches of the centre of the popliteal space. The vertical diameter was eleven inches, and its transverse ten. The extent of its surface from above downwards measured fifteen inches, and from side to side one foot and a half." In all these tumours it was apparent that they grew from the connective tissue of the nerves, and that the nerve-fibres were spread out over the mass. They were what is called false neuromata. Dr. Smith did not neglect the microscopic examination of these growths, and found them to be composed "essentially of a fibro-cellular structure, the fibrous tissue predominating in by far the greater number, the areolar preponderating in a few. The fibres were arranged in bands or loops, among which permanent oval or elongated nuclei became apparent on the addition of acetic acid. In no one instance out of the numerous specimens examined, was there any trace discovered of nerve-tubes, nor any indication whatever of the presence of any of the structures considered by modern pathologists as characteristic of malignant disease." Virchow thinks these tumours are fibro-neuromata, and they are now generally considered to originate in the endoneurium, between the nerve-fibres.

It is interesting to contrast the drawings of the microscopic appearances as figured by Dr. Smith (Plate XV., Figs. 11 and 12) with those given in modern works on pathology, as illustrating the advance in histological technique within the last fifty years.

The number of tumours found on the nerves of the two cases of Dr. Smith was enormous. In the first case (M'Cann) there were upwards of 800; in the second (Lawlor) there were at least 2,000.

The traumatic neuromata form the subject of the latter part of the treatise, and are dealt with in the same magistral style as are the idiopathic forms of the disease.

Dr. Smith's knowledge of pathological literature was notorious, and is shown by the bibliography appended to this work.

The plates, fifteen in number, have been reduced to one-half their original size, but their beauty and fidelity remain unimpaired.

The Blood; How to Examine and Diagnose its Diseases. By ALFRED C. COLES, M.D. London: J. & A. Churchill. 1898. Pp. 260.

THIS is a book which, although it does not contain much that is new or original, will be found useful by anyone who is engaged in microscopic investigations on the blood. The methods of counting the corpuscles, of estimating the hæmoglobin, and of examining the corpuscles, both in fresh specimens and in fixed and stained films, are carefully and fully described.

An account is given of the general morphology of the red and white corpuscles and blood platelets, and then the pathological conditions of the blood are described in a series of chapters. These are chiefly the different forms of anæmias, which are divided into primary and secondary. Among the former a short chapter is devoted to splenic anæmia, in which there is diminution of red corpuscles, a still greater diminution of hæmoglobin, no alteration in the white corpuscles, enlargement of the spleen, no enlargement of the lymphatic glands. The diagnosis is said to be of importance, as there is some evidence that the usually fatal termination may be prevented by removal of the spleen.

A useful table is given showing the alterations in the different elements of the blood which occur in, and are characteristic of, the varieties of anæmia.

The second part of the work deals with the secondary anæmias—those met with in malignant diseases, in purpura and other hæmorrhagic diseases, and in malaria. In this section a good account is given of the malaria parasites, and the methods which should be employed for their examination. The condition of the blood in acute diseases is next described, and here directions are given for making the serum diagnosis of typhoid fever. The blood changes in chronic infectious diseases, as syphilis and tuberculosis, and in various general diseases, as diabetes, gout, myxœdema, are then described, while the anæmias which occur in early life are the subject of the last chapter. In this we find an account of the disease described by v. Jaksch as anæmia infantum pseudoleukæmica, characterised by marked enlargement of the spleen, and at times slight enlargement of the lymphatic glands and liver. There is pronounced oligocythæmia, the red corpuscles falling below 3 millions, and sometimes below 1 million; nucleated red cells are common. There is persistent and pronounced leucocytosis, the white corpuscles rising to from 40,000 to 114,150, and the proportion of white to red being as high as 1–12 or 1–20. The leucocytes are usually chiefly of the multinucleated variety, but sometimes the uninucleated predominate; marrow cells are sometimes present in small numbers; eosinophile cells are sometimes increased, sometimes diminished. As to the nature of the disease, Dr. Coles says: "I cannot help regarding some forms of anæmia infantum pseudo-leukæmica as similar to the so-called splenic anæmia of adults, and am of the opinion that both may be mere varieties of Hodgkin's disease or of pseudo-leukæmia."

A list of references to books on the diseases of the blood and a good index conclude the volume. There are six well-executed coloured plates, showing the appearances described in the text.

We have only to repeat that this will be found an extremely useful book, and should be in the hands of all those who desire to work at the subject with which it deals.

Journal of the Scottish Meteorological Society. Third Series. Vol. XI. Nos. XIII. and XIV. With Tables for the years 1895 and 1896. Edinburgh and London: William Blackwood & Sons. 1898. 8vo. Pp. 248.

THERE can be no doubt that these are the most important and valuable numbers of the Journal of the Scottish Meteorological Society which have yet been published. Fifteen years ago the Meteorological Secretary, Alexander Buchan, LL.D., F.R.S. Edin., contributed two papers on the Atmospheric Pressure and Temperature of the British Islands, based on the observations made during the twenty-four years ending with 1880. He did, in a word, for the two elements of climate just named what Mr. G. J. Symons, F.R.S., has done for rainfall in his well-known work "British Rainfall."

Dr. Buchan has now revised his great work, and has prepared a paper from observations during forty years, from January, 1856, to December, 1895. It is to the appearance of this masterly communication that the numbers of the Journal before us owe their exceptional value. The number of stations for which averages have been obtained are 176 in England, 194 in Scotland, and 30 in Ireland—in all, 400. These include all, or nearly all, the places at which trustworthy observations have been made for the forty years, or such number of years from which good averages could be deduced. Dr. Buchan's paper is illustrated by a series of twenty-six beautiful coloured maps.

Mr. J. Y. Buchanan, F.R.S., contributes a paper on the determination of the temperature of saturated steam and the production of higher fixed temperatures by the condensation of steam on salts and in saline solutions. Mr. R. C. Mossman, F.R.S.E., gives a history of the displays of aurora borealis in London from 1707 to 1895. Mr. R. T. Omond describes the change of temperature with height during anticyclones on Ben Nevis and at some Continental stations.

The remainder of these numbers is taken up with reports from the Council of the Scottish Meteorological Society, additional returns of rainfall for 1895 and 1896, meteorological returns for those years from Scottish lighthouses, and the usual tables illustrative of the meteorology of Scotland in 1895 and 1896.

Archives of the Roentgen Ray. Edited by W. S. HEDLEY, M.D., and SYDNEY ROWLAND, M.A., M.R.C.S. Vol. II. No. 4. May, 1898. London: The Rebman Publishing Company. 1898.

THE contents of this number of the *Archives* are many and varied. The Plates are of exceptional interest. In Plate XLI. are two skiagraphs. The first represents the normal hand and arm of a married lady—married, because we see the wedding ring and its guard-ring; a lady, because of the delicacy of the hand and fingers. The second shows the lower part of a leg riddled with shot. Plate XL. is by Dr. C. Lester Leonard, radiographer to the University of Pennsylvania Hospital, and illustrates the localisation of foreign bodies in the eye by means of the X-rays.

The remaining radiographs are of enlargement of the humerus, osteo-sarcoma, renal calculi, ossifying sarcoma, and of bony union in progress. This last case is a remarkable one. There are three radiographs—the first shows a fracture of the first phalanx of the middle finger; the second, commencing bony union; and the third, complete union.

The editors are to be congratulated upon the excellence of this number of the *Archives*, a publication which has evidently supplied a want in medico-chirurgical literature.

The Edinburgh Medical Journal. Edited by G. A. GIBSON, M.D., F.R.C.P.Ed. New Series. Vol. III. Edinburgh and London: Young J. Pentland. 1898. 8vo. Pp. 672.

DR. GIBSON is a first-rate editor, and is happy in having such a publisher as Mr. Young J. Pentland.

The third volume of the new series of this old-established medical periodical contains no less than thirty-six original articles on almost every branch of medical science.

The other features in the volume are analytical reports on various dietetic and medicinal preparations, reviews of British and foreign medical literature, reports on recent advances in medical science, reports of medical societies, obituary notices, and monthly notes on meteorology and vital statistics. The last are under the management of Dr. A. Lockhart Gillespie. F.R.S.E., F.R.C.P. Ed., Member of the Scottish Meteorological Society.

The *finish* of the volume is all that can be desired.

Burdett's Hospitals and Charities, 1898. Being the Year-Book of Philanthropy and the Hospital Annual. By SIR HENRY BURDETT, K.C.B. London: The Scientific Press. 1898. 8vo. Pp. 1071.

THE present issue of Sir Henry Burdett's valuable guide to hospitals and charities possesses special interest for all who have at heart the welfare of the sick and convalescent. The opening chapters tell of the effect of the celebration of the "Diamond Jubilee" of Her Most Gracious Majesty, Queen Victoria, on the resources of the voluntary charities in the United Kingdom, and discuss the volume of charity in 1897, and other topics relating to that memorable year.

The special Jubilee efforts made for hospitals and kindred institutions throughout the Kingdom resulted in a subscription of no less than £938,041, and the acquisition of a revenue of

£25,000 a year from annual subscriptions. These vast sums have been raised at an average cost of just over *one per cent.*—an astonishing result, which proves that the money is directly due to the sentiments evoked by the Diamond Jubilee celebration.

We are glad to see by a table given at page 61 that the amount raised in Ireland in response to the Jubilee appeals was as much as £103,862, the expenditure on appeals being only £893, or 0·8 per cent.

Seeing how valuable a book of reference this is, it is much to be regretted that in Dublin alone the House of Industry Hospitals, Mercer's Hospital, the National Lying-in Hospital, St. Vincent's Hospital, the Throat and Ear Hospital, and the Westmoreland Lock (Government) Hospital neglected to make any return, although repeated applications for information had been made to their respective responsible officers.

The work contains information about all sorts of kindred institutions, including nurses' homes, and so on. It is a very encyclopædia of information relating to hospitals, asylums, general charities, nursing institutions, and medical schools.

The Meath Home of Comfort for Epileptics, Westbrook, Godalming, Surrey. Fifth Annual Report for the Year ending 31st December, 1897. Godalming: R. B. Stedman. 1898. Pp. 31.

THE object of this excellent institution, which was founded some six years ago, is to provide a home for epileptic women and girls, from the age of two to that of thirty-five years. Inmates are chosen from all parts of the Kingdom, irrespective of religious creed. The "Home of Comfort" is supported in part by voluntary contributions; it is partly self-supporting. The treatment pursued is based, as far as possible, upon the provision of suitable occupations for the individual patients.

The names of the Earl and Countess of Meath, and of the Lady Kathleen Brabazon—Lord Meath's only sister—are found in the list of the working committee.

The medical officer, Mr. P. Dundas Minchin, L.R.C.P.Ed., writes the fifth annual report of the Home, from which it appears that during 1897 there were 31 fresh admissions, compared with only 15 in 1896. Thirteen inmates left during the year, 6 of which were quite unsuitable cases, and should never have been sent to the Home, which is not suited for very advanced cases, or for cases where there is any decided mental deficiency.

As to the epileptic condition of the patients the striking feature continues to be the marked initial improvement after admission, both in the frequency and character of the attacks. This improvement in the large majority of cases continues to be maintained, and in a short time the girls, from being a misery and a burthen both to themselves and to others, begin to realise that not only can they be useful members of society themselves, but that they can also to a large extent assist their more helpless sisters in affliction.

Doctors and Patients: Hints to Both. By DR. ROBERT GERSUNGY. Translated by A. S. LEVETUS, with a Preface by D. J. LEECH, M.D. Bristol: John Wright & Co. 1898. Pp. 79.

THIS interesting book gives in a pleasant, readable way the opinions of a distinguished member of the profession in Vienna on medical ethics. It is extremely well written, free from diffuseness, and illustrative cases are only lightly treated, so as to emphasise the author's contentions. We can recommend this book to medical men and patients as setting out pleasantly and clearly the relations that should exist between them, and feel sure that if read it will lead to an increase of mutual liking, respect, and give-and-take.

A Manual of Practical Medical Electricity. By DAWSON TURNER, M.D., F.R.C.P. Ed. Second Edition. London: Baillière, Tindall, & Cox. 1897. Pp. 335.

IN general arrangement this follows the plan of the first edition, but several slight alterations for the better have been made, and twenty pages and twenty-three excellent illustrations have been devoted to the X-rays. The book is divided into parts, which deal respectively with electrophysics, electro-physiology, electro-diagnosis, electro-surgery, and electro-therapeutics—a rational and convenient classification, which renders it an easily used handbook by the practitioner. Whilst the author has avoided the common error of padding his book with the well-worn history of the earlier discoveries concerning electricity, he has not fallen into the opposite error of assuming previous knowledge in his readers, but has written his work in clear and simple language, defining and explaining the terms used, and freely illustrating the apparatus required for the medical and surgical use of electricity.

Synopsis of The British Pharmacopœia. 1898. Compiled by H. Whippell Gadd. London: Baillière, Tindall & Cox.

The aim of this little book is to show in what way the British Pharmacopœia of 1898 differs from that of 1885, and also to give a complete synopsis of the new work.

It is one of the first of the synopses issued, and consists of 183 pages of accurate and useful information, and can be carried in the waistcoat pocket. The price is only sixpence.

The Extra Pharmacopœia. Revised in accordance with the "British Pharmacopœia," 1898. By William Martindale, F.L.S., F.C.S., Member of Council of the Pharmaceutical Society and late Examiner. Serotherapy, Organotherapy, Medical References and a Therapeutic Index. By W. Wynn Westcott, M.B. Lond., H.M.'s Coroner for North-East London. Ninth Edition. London: H. K. Lewis. 1898. Pp. xxviii + 626.

The cardinal point to remember in connection with the ninth edition of this truly excellent little book is that it has been revised in accordance with the new British Pharmacopœia, in the compilation of which one of the authors, Mr. William Martindale, has borne an honourable and most useful part,

In the present Edition of the "Extra Pharmacopœia" are to be found new monographs in miniature on aloes, calcium chloride, chelidonium, digitalis, compounds of mercury and of iron, mustard, opium, orange, rose, mescal buttons, and other drugs. Mescal buttons are the fruit of the *Anhalonium Lewinii,* and are used by the Mexican Indians to produce intoxication accompanied by visions.

While this book serves as an admirable pocket commentary on the British Pharmacopœia, it also gives numerous details as to the newer unofficial remedies, together with references to their use. Among the new synthetic compounds which are mentioned we find eucaïn, holocaïn, orthoform. Erythrol and manniotol nitrates and other similar novelties are described and their therapeutic power is discussed, so that the information is fully up to date. In the formula for "Tinctura Laxativa" at page 121 the altered strengths of the official tinctures of nux vomica and belladonna has necessitated an alteration at the last moment. The new (neutral) gender of pepsin has led to a little inconsistency under the heading "Pepsinum," where we read of "Pepsina Amylacea" and "Vinum Pepsinæ."

We congratulate the authors on the promptness with which they have been able to publish this ninth edition of their most useful companion to the Pharmacopœia.

The Mineral Waters and Health Resorts of Europe. Being a revised and enlarged Edition of "The Spas and Mineral Waters of Europe." By HERMANN WEBER, M.D., F.R.C.P.; and F. PARKES WEBER, M.D., F.R.C.P. London: Smith, Elder & Co. 1898. 8vo. Pp. 524.

THE first edition of this admirable work quickly won for itself a deserved reputation as a reliable and pleasantly-written text-book and guide to health resorts and watering places. In the present edition the authors have introduced many alterations and made many improvements. Two fresh chapters (XVIII. and XIX.) have likewise been added. In the former of these inland climatic health resorts are described and classified. The latter gives a short account of "grape-cures," dietetic cures, and sanatoria for special methods of treatment for pulmonary consumption.

In proof that the work is thoroughly up to date, we may mention that argon is described (page 17) as being present in the thermal waters of Bath, Buxton, Wildbad, and so on. Argon, say the authors, is doubtless present in waters which are fairly rich in free nitrogen. The gas "helium," previously to its discovery in certain minerals in 1895 by Professor Ramsay, had been known to exist only by its band in the spectrum of the solar chromosphere. Shortly after Professor Ramsay's discovery it was found to be present in association with argon in the waters of Bath and in some of the Cauterets waters. The authors consider that it is very unlikely that nitrogen, argon, or helium in the Bath or Cauterets water exerts any special therapeutic effect. Still, in spite of theoretical grounds, they admit that it is not quite impossible that such an effect may be produced by these elements.

In the fourth chapter we are glad to find that the authors, when discussing exercises and massage at spas, justly attribute to William Stokes the credit of advocating the use of exercise in certain heart affections.

Chapter V. gives an excellent account of daily life at spas. The importance of medical supervision while undergoing the "cure" at spas is very properly insisted upon, and illustrated by a graphic description of that disturbance of the system known as "Well-fever," "Bad Friesel," "Fièvre thermale," "Crise thermale," or "Poussée thermale."

The succeeding chapters are devoted to the different classes of mineral waters. Simple or indifferent thermal waters, muriated or common salt waters, simple alkaline, muriated alkaline, sulphated alkaline, sulphated and muriated-sulphated iron or chalybeate, arsenical, sulphur, and earthy or calcareous waters are all in turn described and illustrated—Russian and Hungarian spas being included. Mention should be made of the very comprehensive spa-map of Europe, which will be found in a pocket in the back cover of the book.

In Chapter XVI. the authors describe the various natural "table-waters," which are defined (at page 320) as "feebly mineralised waters, usually containing a large quantity of free carbonic acid gas." They may be of some use in medicine, but they "are more frequently used for ordinary drinking at meals, or for refreshing draughts between meal-times, than for strictly medical purposes." We are thoroughly in accord, however, with the authors' opinion that "much of the temporary popular preference of particular 'table-waters' over others depends on mere fashion and advertisement."

"Marine Spas and Health Resorts" form the subject-matter of the seventeenth chapter, which is very entertaining and instructive. Our fellow-countryman, Dr. D. Edgar Flinn, is quoted as *the* authority on Irish Health Resorts, the second edition of his bright little work on "Ireland: its Health Resorts and Watering Places," published in 1895, being quoted as a text-book in the bibliography at the end of the volume.

The foregoing are but a few among the many interesting topics discussed in this book—a book which will enhance the reputation of its authors, and (we may add) of its publishers as well.

The Medical Examination for Life Assurance; with Remarks on the Selection of an Office. By F. DE HAVILLAND HALL, M.D., F.R.C.P.; Physician to, and joint Lecturer on Medicine at, the Westminster Hospital; Physician to the Rock Life Assurance Company. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited; Hirschfeld Bros. 1898.

IN this booklet of 73 pages the author gives the reader the more important items of information for the guidance of those members of the profession who are called upon to make physical examination of the persons who submit themselves for scrutiny to the officials of the Insurance Companies. He regards the individual in each of those cases from four principal points of view:—I. Family history; II. Personal history; III. Present condition; IV. Environment. To the text are appended specimens of the forms used for the confidential reports of the medical examiner; Dr. Leslie Ogilvie's table of the classification of assurance lives, with illustrative types—with an explanatory note, and an index of assurance offices. There is a very good index at the end.

Report on Bubonic Plague. Being a Report based upon Observations on 939 *Cases of Bubonic Plague treated at the Municipal Hospital for Infectious Diseases at Arthur-road, Bombay, from September 24th,* 1896, *to February 28th,* 1897. By KHAN BAHADUR N. H. CHOKSY, Extra Assistant Health Officer, Bombay Municipality. (Reprinted by authority.) Bombay: Printed at the *Times of India* Steam Press. 1897.

THE facility afforded to the author of this report for collecting statistics is shown by the fact that "during January and February, 1897, 642 plague cases were treated." The following is the classification adopted of the "Types of Plague":—

"1. *Pestis Minor, or Extremely Mild Plague.*
2. *Pestis Ambulans.*
3. *Pestis Simplex Bubonica, or Simple Bubonic Plague.*
4. *Pestis Septica, or Septic Plague.*
5. *Pestis Pulmonalis, or Pneumonic Plague.*
6. *Non-typical Forms of Plague.*"

"Besides the above, two other forms of Plague—Abdominal and Laryngeal or Diphtheritic—have been mentioned; no cases of the abdominal type have been observed in this hospital. The laryngeal type, if it could be so called, was observed not so much as a distinct entity, but more as an advanced form of deep cervical buboes, with infiltration in the connective tissue of the neck, spreading right on up to the pharynx and larynx, and involving them in the same process. But no cases of a simple laryngeal type were observed."

Of the six varieties so tabulated, the first and second have no fatal results. The third and fourth are the forms which are specially characteristic of the plague. "So long as the bacilli are confined to the lymphatic system alone, without infecting the blood, the case may be called simple bubonic, but once the blood is infected and graver symptoms develop with infection of other glands, extensive infiltrations, &c., the case becomes septic." The author's view accordingly is that "the differentiation between the simple bubonic and septic forms is a question rather of degree than of kind, depending as it does upon whether the plague bacilli infect or do not infect the blood." In the fifth variety of plague "the lungs seem to be primarily infected, resulting in a peculiar form of lobular pneumonia quite characteristic of the affection. It has been assumed that the pneumonia here is a primary pneumonia as distinguished from the secondary form which appears in some cases of plague after the buboes have become fully developed."

With regard to the mode of absorption of the virus, "in not more than 5 per cent. of cases could direct evidence of infection through breaches of surface be traced, and this is really inconsiderable when it is remembered that most of the patients admitted were in the habit of going barefooted all their lives, and had innumerable cracks and fissures on the soles and elsewhere."

With regard to microbic growth—"The pus from incised buboes was always found on the first day to contain a large number of plague bacilli;" and "the sputum in cases of pneumonia, primary or secondary, has been observed to contain almost pure cultures of plague bacilli." Having regard to the latter fact, it at once "led to the conclusion that there was direct infection through inspiration." The writer of the present report, however, decides that "ordinary respiration, or rather expiration of plague patients, does not seem to infect, for if it did scarcely a doctor, nurse, or hospital attendant would enjoy the immunity that they have hitherto done." We are further informed that "infection through the stomach appears to be doubtful;" and that "in no case was the plague attributed to rat-bite, either immediately or some time previous to infection. And as regards flies and fleas, ants, bugs, and even mosquitoes, however enticing the theory appeared as tending to solve a difficult problem, it was more fanciful than real, appealing, as it did, more to the imagination than to reason and common sense."

The period which elapsed before the development of the symptoms was, as would be expected, very hard to even guess at; but we are told that "from careful inquiry from intelligent patients it was found that generally the period of incubation was from three to six days."

The *aspect* and *speech* of the patients who presented themselves at the hospital were diagnostically characteristic. The author of this report is a firm believer in the *facies pestica*. With regard to the decubitus: "If recumbent they generally lay flat on the back, with the limbs extended, and almost invariably one leg crossed over the other."

But we have already occupied too much space with our extracts. We will accordingly conclude by recommending every reader who is at all interested in this gruesomely fascinating subject to read this valuable report for himself.

The Subconscious Self, and its Relation to Education and Health. By LOUIS WALDSTEIN, M.D. London: Grant Richards. 1897.

THIS beautifully printed volume of Dr. Waldstein's forms an interesting addition to the important series of "New Scientific Books," which, to say the least, do great credit to the good taste and selective judgment of the publisher.

The author uses—very ingeniously, and with a full knowledge of the physiology of the nervous system—the item of the "Subconscious Self" to explain the phenomena of early impressions, prejudices, religious beliefs, hypnotism, hysteria, insanity, worry, &c. The points at issue are so varied and so important that we cannot give full reasons for the impressions we have received from the perusal of this volume within the limits of a short review. We therefore recommend our readers to judge for themselves. They will find material enough for profound suggestion in this comparatively small volume (of 171 pages).

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

Rash of Influenza Simulating Typhoid. By Dr. Pelon, of Montpellier. Translated by George Foy, M.D., U.C., Va.; F.R.C.S.; Hon. Fellow of the Southern Surgical and Gynecological Association, U.S.A.; Member of the Society of Anæsthetists, London; Surgeon to the Whitworth Hospital, Drumcondra.

Dr. Pelon (*Gazette des Hôpitaux*) writes:—Influenza is frequently accompanied by cutaneous eruptions, and these generally assume the characters of urticaria, herpes, or roseola. Sometimes they resemble the eruption of variola, scarlatina, or erysipelas. When present they may become a source of error in diagnosis. One eruption which I have occasionally met with, which is more liable to cause an error in diagnosis than any of the others, is the eruption of lenticular rose spots, such as are met with in the course of typhoid fever. Professor Teissier, of Lyons, was one of the first to draw attention to this eruption in influenza, in a paper in the *Lyon Médical*, in June, 1892. In the same year Professor Lemoine, of Lille, and M. Delezenne, now Professor in the Medical School of Montpellier, considered this form of rash not infrequent in the disease. I have had occasion myself to notice this winter, during a rather severe epidemic in our city, three cases of influenza with the typhoid lenticular rose rash. The three cases I propose to briefly report were treated at a suburban hospital of Montpellier, under the care of Professor Carrieu, for whom Dr. Ranzier was then acting.

Case I.—R., a soldier of the 122nd regiment of infantry, came under care on the 25th of January, with influenza. Three days previously he had a rigor whilst at exercise. Headache very severe, and pain extended down to the nape of the neck. Epistaxis, of a not severe type, followed. The patient commenced paroxysms of coughing, and suffered from a sharp purging: six stools a day. On examination the patient was found greatly dejected. His tongue was typhoid like; covered with a creamy fur on its greater part, but with a red tip and border. The belly was greatly swollen with wind, but pressure in the iliac regions gave pain. He presented some lenticular rose spots, which, though not numerous, were well marked; none were observed on the chest. Auscultation detected nothing more than a slightly roughened breathing. The evening temperature was 105° F., and in the morning it was 101·2° F. The pulse was 96. The diagnosis was typhoid fever. The serum test for diagnostication was made during the day. On the 27th the symptoms were less marked, the diarrhœa had ceased, but the rash was very typical and clear, and the temperature varied from 103° to 101° F.

On the 29th the temperature fell, the tongue assumed its normal appearance, and the rose spots disappeared. The cough was now accompanied by a muco-purulent sputum, and subcrepitant râles were heard along the bases of the lungs. The serum test gave negative results. The diagnosis was changed to influenza.

On the 31st the patient was practically well; there was no return of the fever, and the cough was much easier.

CASE II.—V., a soldier of the 122nd regiment of infantry, admitted on the same day as the previous case, also with the diagnosis of influenza. He said that eight days before he took sick, with a violent colic and sharp purging. The patient, amongst other ills, complained of a severe headache. He also had a severe cough with some sputum, and loss of appetite. On admission he was found to be suffering from megrim, was very weak, and had a violent headache; he was purged six or seven times a day. Pressure over the iliac fossæ caused pain. The tongue was red on its tip and borders, but covered with a creamy fur on its centre; the cough was frequent and accompanied by a free muco-purulent discharge. Auscultation recognised disseminated sonorous and sibilant râles throughout the lungs. The temperature ranged from 104·5° F. to 101° F. The pulse was 90. Over the belly and chest the typical rose-rash of typhoid fever extended. The diagnosis was typhoid fever with general bronchitis.

On the 27th the temperature fell, the diarrhœa lessened, but the tongue was unchanged; the respirations became harsh, and the rash remained abundant and typical. The serum test gave no result.

On the 29th the temperature fell, the patient is better, he suffers less from his head and belly, the rash persists, the cough continues, and subcrepitant râles are heard along the bases of the lungs. We now made a diagnosis of influenza attacking the intestinal tube primarily, with attendant bronchial troubles.

On the 31st the fever has left, the cough is less severe, the patient is well, but the typhoid-like rash is still present.

CASE III.—B., a house-keeper, thirty-eight years of age, was admitted on the 26th of January. Complains of a great sense of weariness during the past month, has experienced pains in her legs and suffers from a violent headache, which is worse at night. The thought of syphilis was quickly dispelled by the history of the case. During the past week the feeling of weakness had greatly increased, and the headache is unbearable, the voice is lost. The patient has a severe cough with phlegm, she has lost her appetite, and is very constipated. For two days past she has suffered a sharp pain in the left side of the thorax.

On admission her temperature was 103·8° F. When examined the patient was found to be very prostrate. The tongue was large, soft, coated with a red tip and borders. The two iliac fossæ are painful, more particularly the right one. Auscultation discovered blowing respiration along the bases of the lungs, better marked on the left than on the right side. Temperature in the morning marked 102·2° F.; the pulse 116. The lower margin of the thorax and the front of the belly were covered with a well-marked typhoid rash.

The diagnosis of the case formed the subject of discussion, and after considering the symptoms and giving due weight to its points of resemblance to influenza, it was registered as typhoid fever.

On the 28th the same test was negative in its results, and an examination of the sputum detected no bacilli of tubercle. The temperature rose to 103° F., and the following morning fell to 101° F. The pulse fell to 100. After a purge the bowels freely acted, the patient passing several large stools; the tongue remains unchanged; the rash is more abundant and very clearly marked.

February the 1st.—After three days the temperature is still 99° F.; the cough is less; there is no headache; the tongue has assumed its normal character, but the rash persists, the earlier spots disappearing and being replaced by fresh crops.

6th.—The rash has ceased to appear. The patient is still very weak, but can take food.

ULCERATED CHILBLAINS.

DR. J. DE MONTMOLLIN (*Rev. Méd. de la Suisse Romande*) recommends the ulcerated chilblains to be bathed for 15 or 30 minutes four times a day with a weak tepid solution of tannic acid. He reports some successful cases by this treatment.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—EDWARD H. BENNETT, M.D., F.R.C.S.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF OBSTETRICS.

President—F. W. KIDD, M.D.
Sectional Secretary—J. H. GLENN, M.D.

Friday, March 18, 1898.

The PRESIDENT in the Chair.

Specimens.

DR. SMYLY showed a uterus, weighing 9½ lbs., which he had removed for myoma by panhysterectomy. The patient did not complain of any symptoms, but the large tumour, which was uninodular, was in process of enucleation, and a portion of it was protruding through the os uteri, which was dilated to the size of a crown piece. The patient, who had been operated upon three weeks previously, was making an excellent recovery.

He also showed a uterus removed from a patient aged forty-nine. She was a widow, who supported herself and family by farming, but had latterly been unable to work, owing chiefly to pain in her back. The uterus was found retroflexed and adherent. The posterior *cul-de-sac* was opened, and the adhesions partly broken down with the finger, partly divided with scissors. An anterior colpotomy was then performed with a view to vaginal fixation of the uterus, but the hæmorrhage from the divided adhesions was so considerable that it was deemed safer to remove the uterus. Upon examination after removal the organ was found in a state of retroflexion, owing to a hard inflammatory band on its posterior surface, so that had the uterus been fixed in anteversion the constant strain upon this band would doubtless have caused such suffering that her symptoms would have been greatly aggravated. She is now perfectly well, and free from pain.

DR. J. H. GLENN—Myomatous uterus removed by intraperitoneal hysterectomy.

DR. R. D. PUREFOY—Double ovarian cysts.

Dr. Jellett—Early specimen of sarcomatous ovary removed by anterior colpotomy.

Clinical Report of the Rotunda Hospital for three years, 1893-6.

Dr. W. J. Smyly read this Report. [It will be found in Vol. CV., at pages 295 and 383.]

The **President** said he was sure that the thanks of the Section were due to Dr. Smyly and his colloborators, Drs. Wilson and Jellett, for the Report. He thought that such results were not likely to be eclipsed for a considerable time. He expressed surprise at the number of cases under the heading of accidental hæmorrhage. In 134 cases of abortion, 50 were curetted, which seemed to be a very large proportion. He congratulated Dr. Smyly on there being no death from placenta prævia. He thought that severe post-partem hæmorrhage, not arising from the situation of the placenta at all, often occurred, and that its origin was often overlooked. He thought that the case in which there was found a double uterus after removal of the uterus, and the subsequent recovery of this patient, was very remarkable.

Dr. Knott asked how Dr. Smyly had prepared the saline solution used for transfusing.

Dr. Tweedy congratulated Dr. Smyly on his results. He observed that a great many of the deaths were in women brought into the hospital with death symptoms already marked. Three of the five septic cases had evidently become septic outside, and nothing could have saved them. The cases of eclampsia seemed to have been very severe. The giving of morphia in eclampsia was an interesting point. Some observers say that its administration kills the child, but in case No. 7 of Dr. Smyly's the child was alive, although the mother got more morphia than any other case. He (Dr. Tweedy) said that morphia could not kill the child, but killed by acting on the respiratory centre. He noticed that laminaria tents had been used in one of the cases of death after abortion. Did thorough plugging of the vagina not dilate the cervix properly in this case?

Dr. Lane congratulated Dr. Smyly on the results of the three years. He could not quite agree with the President in saying that the deaths from accidental hæmorrhage were above the average.

Dr. Glenn added his hearty congratulations to Dr. Smyly on the distinctly great improvement from former years, culminating in the wonderfully low death-rate. In reference to curetting in abortions he regarded that as distinctly an evolution. He thought that the use of the sharp curette in the treatment of abortions was, in skilled hands, quite safe, while for those not so self-confident the use of the blunt instrument was good practice. Dr. Smyly's three fatal cases of incomplete abortion would have died whether curetted or not. He thought that a serious omission in reference to forceps cases had been made in the Report—viz., there was no record of mortality in regard to the children. He thought that a record of these deaths should also be kept, as it would be of great interest to future generations.

Dr. Doyle considered eclampsia a form of uræmic convulsions. He had not had experience in the treatment of eclampsia with morphia, but had found chloral very useful. He thought that the condition of the kidneys should be found out at the time of the eclampsic convulsions. He concluded by congratulating Dr. Smyly on his results.

Dr. Smyly, in reply, thanked the members for their kindly criticism. In compiling a Report of this kind accuracy was of the first importance, and this he believed was secured by the system employed in the Rotunda. He believed that if the suggestions made by Dr. Glenn were adopted by future reporters they would add to the value of future Reports. He would himself suggest that in addition to noting the total number of cases in which the temperature rose above 100·8°, it would be important to record the number of cases in which the patients were really ill, and those in which it rose on one occasion only. He agreed with Dr. Tweedy that one could not judge of the results of treatment from a small number of cases, and that even large numbers would give an erroneous view, as owing to the rule of the hospital admitting all cases when in labour, a large number were admitted in a condition in which treatment came too late. This was especially evident in the cases of eclampsia and septicæmia. Of the three deaths noted under the former heading, one was in a dying condition when admitted, and he did not believe that the other two could possibly have been saved, certainly not by chloroform.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—J. M. Purser, M.D.
Sectional Secretary—E. J. McWeeney, M.D.

Friday, 25th March, 1898.

The **President** in the Chair.

Traumatic Rupture of Duodenum.

Dr. E. H. Bennett exhibited an example of rupture of the duodenum from a kick of a horse. In the absence of any definite symptoms an exploratory laparotomy was performed without any lesion being discovered. At the *post-mortem* examination it was found that the portion of the duodenum which lay against the spine and outside the peritoneum had been ruptured, and that the intestinal contents had escaped along the spine downwards as far as the pelvis. He commented on the vagueness of the clinical signs of this injury, and its great fatality.

Dr. E. J. McWeeney said that he remembered seeing in the *post-mortem* room a case of traumatic rupture of duodenum, following a chronic, round, clean punched-out duodenal ulcer. In that case the patient had succumbed to an injury—the kick of a horse in the stomach. Immediate collapse followed the injury. Diagnosis of a rupture of some important abdominal viscus was made, but patient was too far gone to allow of operation. The rupture was into the peritoneal cavity, and was attended by acute, diffuse, purulent peritonitis.

Dr. E. H. Bennett, replying, drew attention to the statement of Colin, to whose facts he (Dr. Bennett) had alluded, that the clinical symptoms of such injury are very vague, and of such injuries recorded, only one recovery followed. A second recovery occurred recently in Buda-Pesth, where the abdomen was opened, after the occurrence of peritonitis, three or four days after injury, the abdominal cavity drained, and the wound sutured.

Cancer of Œsophagus—Perforation of Right Subclavian Artery by a Secondary Growth.

Dr. J. W. Moore read a paper on the above disease. [It will be found in Vol. CV., page 396.]

Professor O'Sullivan read an account of the pathology of the case.

Dr. Craig said that the case was an extremely interesting one. A somewhat similar case came under his care in the past fortnight, where the primary cancer occurred in the œsophagus just below bifurcation of trachea, the secondary growths occurring in many places. A large growth occupied the lesser omentum, extending from the posterior wall of the lesser curvature of stomach to the under surface of liver; a lower growth surrounded the aorta, and was adherent to the vertebral column. There were small growths in liver, lungs completely studded with small tumours, and epiglottis also involved; and, although vocal chords and larynx were not involved, there was behind and on edges of epiglottis a new growth—a squamous epithelioma. In his experience of such cases, in nearly all of them the growth involved that part of œsophagus which lies opposite the bifurcation of trachea.

Dr. M'Causland asked if a bougie had been passed more than once? Was any blood or matter noticed on withdrawal of bougie? Was any obstruction noticed? Was the vomited matter ever examined microscopically, and would such examination throw any light on the diagnosis? Was any reason assigned for the fœtid expectoration? His experience was that cancer in the lung gave rise to very fœtid expectoration and marked symptoms.

Dr. E. J. McWeeney agreed with Dr. Craig in saying that the favourite place for cancer of the œsophagus is about bifurcation of trachea. Last week he made a *post-mortem* in a case of cancer of the œsophagus corresponding to bifurcation of the trachea. The left bronchus was adherent to the thickened portion of the œsophagus, and although the œsophagus itself was ulcerated and thickened, there was not the slightest attempt at ulceration of the bronchus, and although there was a big packet of lymphatic glands wedged in between the structures in this situation, careful examination revealed not the slightest evidence of cancerous deposition in any one of them. They were all black, and appeared to be infiltrated with carbonaceous pigment from the lungs. It was thus interesting to note how completely limited cancer may be to the mucous membrane of the œsophagus itself without spreading to such eminently attackable structures by epithelioma as the nearest lymphatic glands.

Dr. Knott had seen Dr. Moore's case, and could confirm his difficulty about the diagnosis. About a hundred years ago, when disease of œsophagus was rare, the upper third of œsophagus was laid down by all authorities to be the most favourite seat for cancer which was scirrhus. Later German statistics showed that the common seat was at the lower end, and was always epithelioma. He asked Dr. Moore what was his experience of secondary growth as limited to œsophagus. He had heard it laid down by some authorities that fœtid expectoration is never characteristic of cancer of the lung.

Dr. Moore, in reply, said that the bougie had been passed only once before the case came under his observation, and the passage of the bougie produced a remarkable amelioration in the symptom of dysphagia. However, he forbade further attempts to pass it, as he came to the conclusion that a thoracic aneurysm was present. With regard to the expectoration, he concluded that that was another evidence of intrathoracic aneurysm, that the pressure was exercised on the nutrient vessels of left lung in which there were distinct physical signs. In answer to Dr. Knott he said that there was no evidence of involvement of the lung in the cancerous growth at all. He added that the mode of death seemed to him to confirm the diagnosis of aneurysm, which was first called in question by the X-rays examination, which revealed no aneurysmal tumour.

Bones Removed in Case of Fracture of Skull.

Mr. Wheeler exhibited a patient, and bones removed, trephined for depressed fracture of skull.

C. M., aged twenty-nine, occupation a coachman, was admitted into the City of Dublin Hospital on the 21st March, 1897, having sustained a severe injury to his head, caused by a fall from the top of an electric tramcar while in motion. The patient's condition on admission was that of profound coma, he was completely paralysed, and his respirations were stertorous, his pulse was laboured and slow, 50 per minute; the surface of his body was warm and perspiring; both his pupils were dilated, his reflexes were absent; his fæces and urine were retained; there was no hæmorrhage from his ear, mouth, or nose. A large depression could be easily detected upon the left side of his head, in front of the parietal eminence.

A large V-shaped flap was raised, the hair having been previously removed and the soft parts thoroughly cleansed. This exposed the depressed area of bone, which was at the junction of the parietal and sagittal sutures, and there was brought into view an extensive comminuted fracture invading both frontal and parietal bones. A large triangular piece of bone was removed, and two smaller pieces with several spicula. From the superior portion of this large triangular piece of bone the superior longitudinal sinus had to be separated. There was considerable hæmorrhage from a large cerebral vessel as well as from wounds in the dura mater. Ten minutes after the operation the patient conversed with his master, a Doctor of Medicine living in Merrion-square. It is not necessary to detail the daily progress of this patient, who has quite recovered, except for the loss of sight in his left eye.

After the operation, and for days after, he could see tolerably well with his left eye; his field of vision was impaired, and occasionally there was a "blur," to use his own phraseology, over and round objects he looked at. During this period there could not be ascertained by transmitted light anything abnormal with the fundus or with his optic disc, yet his pupil contracted when his eye was closed and dilated widely when his eye was opened, or when he opened it himself by request. There was no ptosis. There was not any inequality in his pupils previous to the dilatation of his left pupil observed on exposure to light. There was not any sluggish reaction of the right pupil on a strong beam of light being thrown into his left eye. There was not any contraction followed by dilatation, or oscillations of any kind; his pupil remained dilated. The so-called paradoxical pupil is diagnostic of early paralysis, and consists in this—that when a strong beam of light is thrown into the eye with the focal illumination, the pupil at first contracts fairly well, then dilates slightly, contracts again, and after a few such oscillations finally dilates widely, although the strong light still shines into the eye. There is no paralysis in this case.

Traumatic Rupture of Liver and Kidney.

Mr. Wheeler related the history of a child, aged six years, who was run over by a cart, causing rupture of the liver and right kidney, both shown. The child was admitted to the City of Dublin Hospital on March 10th, 1898, at 3 30 p.m., apparently with little the matter, as it ran about the accident ward. There was no external mark. At 4 15, the child, lying in its bed, was observed to get weak, and shortly after exhibited all the signs of collapse; three hours after it died.

The liver presented a contused appearance. On the upper surface and posterior portion of the right lobe, towards the anterior right margin, was a linear rupture, with the capsule torn about ¾ of an inch. Between this and right border, near the right lateral ligament, there was an angular gaping rupture, 2½ to 3 inches long, communicating about the centre with the posterior surface and extending round the right margin. Upon the under surface of the right lobe, corresponding to the depression for the kidney, was a long irregular rupture, gaping slightly and extending at one portion into the rupture on the superior surface.

The right kidney presented upon the anterior surface three long gaping ruptures, two of which passed round its inner border and extended posteriorly, the third extended to theouter border and deeply into the kidney substance. Upon the posterior surface, as well as the two ruptures mentioned, there were about its centre several minute ruptures which were covered by the unbroken capsule. The child passed urine on admission; there was no blood passed with the urine. Although the *post-mortem* examination revealed a large blood-clot in the urinary bladder, there was a large quantity of blood in the peritoneum. The vessels of the kidney were not injured.

Mr. T. Myles said that Mr. Wheeler's second case shewed the great obscurity of the symptoms. It was astonishing to note the extraordinary amount of liver shattering that may exist, and be for a time unaccompanied with any severe symptoms. He related the case of a man who got squeezed between buffers on the railway, but had sufficient strength to walk a considerable distance before feeling weak. He was then driven to hospital and put to bed. Soon afterwards he developed some collapse and slight tenderness, and stated that it hurt him to draw a deep breath. Three days afterwards, in a moment of anger—he was sitting up in bed at the time—he snatched up a pillow and threw it, and immediately gave a violent yell, lay back, and was dead in half an hour. *Post mortem* showed the whole abdominal cavity full of blood, three vertical fissures in liver, one extending half way through its substance. Two of them had absolutely united, but the third had apparently been torn open by the sudden muscular effort. He related a remarkable case where a man sustained an abdominal injury, but was able to walk some distance to hospital, assisted by some friends. He vomited blood very freely, and became moderately collapsed. Death occurred in twenty-four hours. *Post mortem* showed the small intestine cut clean across as if cut with a sharp knife, the cut extending for some inches through the mesentery. The right external iliac artery was torn, and a huge extravasation of blood surrounded it. His liver was turned into a regular jelly, and was utterly unrecognisable, and his fifth lumbar vertebra was dislocated half way back behind the fourth. Death was due to shock. It was probable, he said, that in the "wind contusion" death was due to traumatic rupture of liver due to the gliding action of the cannon ball shattering and rupturing the liver, without any external mark of violence.

Dr. E. J. McWeeney said that about a fortnight ago he had made a *post-mortem* examination on a man with rupture of liver caused a fortnight previously. A cart-wheel had passed over thorax, and the right lung was ruptured, giving rise to a suppurating gangrenous cavity in its substance, and the liver below the diaphragm was ruptured in the most convex part of the right lobe for some inches into the depth of its substance. For several inches along the surface, corresponding to this rupture, the diaphragm had been detached from the liver, leaving a space filled with pus, blood, and bile. On washing away the stuff, the walls were of a brilliant yellow hue, due to bile staining, but the contents were of a brown colour, apparently due to blood and pus, as suppuration had taken place. Death was due to septic absorption. There was nothing whatever in the clinical symptoms to cause a surgeon to suspect rupture of the liver. All the interest was in connection with the lung.

Mr. Wheeler, in reply, said that his own case recalled to his mind the case of a man who received a kick in the abdomen. As soon as collapse was over and reaction established, he tied a branch of the cœliac axis artery in the abdomen. He had seen an example of "wind contusion" mentioned by Mr. Myles, where a man got a six-pounder ball across him. The man walked for a mile and a half. There was not an abrasion on the skin, and his liver, spleen, and kidney were ruptured. Death ensued.

Sarcoma of the Sphenoid.

Mr. Wheeler showed a large sarcomatous tumour—originating in the sphenoid bone—removed from a male patient, aged twenty-five years, whose history was as follows:—

A tall, well-formed man, by occupation a carpenter, was admitted into the City of Dublin Hospital, on October 18th, 1897. He had suffered from inflammation of his right middle ear, consequent upon which he had perforation of his tympanum, and some discharge; he had slight facial paralysis, accompanied with a "scalding" pain in the right side of the face; he had tenderness and pain over his right mastoid region—some rigidity of his masseter muscles; there was no vomiting, no unsteadiness of his gait; there was no eye trouble, nor did examination reveal anything abnormal in his eyes. Mr. Wheeler trephined this patient by his own operation, in December, 1897, opening the mastoid cells, the tympanum, and exposing the dura mater, at the upper arc of the trephine circle, which allowed the temporal lobe to be explored. The patient recovered rapidly and progressed to convalescence, feeling much relieved from the pain. The discharge ceased, and there was less contraction of his masseter muscles, the scalding pains in his right face were very much lessened, but the facial paralysis remained unaltered.

In February, 1898, the scalding feeling and pain again troubled him. His masseter muscles again became rigid and contracted, and he now complained of pain in the temporal region anterior and on a level with the superior margin of his ear. The history of his case told that he had received an injury in this situation by a brick falling upon his head, while he was following his occupation as a carpenter in an unfinished house. The possibility of a cerebellar abscess was thought of, but there was not sufficient evidence to verify such a conclusion. There was nothing that could be found by ophthalmic examination to indicate tumour of the brain; his eyes were normal. He was trephined (by Mr. Wheeler) over the seat of his pain upon March 3rd, 1898. A careful examination was followed by a negative result; the man expressed himself much relieved from his pain, which had been acute; he lived until March 8th, and apparently died of pressure on the region of the medulla.

An examination was made, and a rounded nodular tumour was seen bulging into the middle fossa on the right side, extending into the sphenoidal fissure, and posteriorly to the petrous portion of the temporal bone for about 1½ inch, its superior surface being on a level with the anterior-clinoid process; continuing inwards it occupied the space between the anterior and the posterior clinoid process of the right side, extending beyond the middle line; posteriorly a nodule could be seen lying under the fifth nerve, and internally to this a large nodule encircling the sixth nerve as it passes the dura-mater; the carotid arteries were surrounded by this growth, and the third nerve passed into it. The tumour was of vast extent, pressing into the ethmoid bone in front, and into the pterygoid regions on the right side, behind it involved the basilar process of the occipital bone and the occipito-atlantoid joints. The specimen was interesting, taking into consideration the absence of all eye trouble, notwithstanding that the third, fourth, fifth, and sixth nerves passed through the tumour. Two days before the operation of March 3rd, this patient walked about the ward and sat in a chair for two hours.

Dr. McWeeney, who kindly examined the tumour, reports as follows:—

"This tumour is a large round-celled sarcoma. In places there are trabeculæ of very dense, almost structureless, and more or less hyaline tissue, which give the structure a resemblance to cylindroma. This tough structureless material was probably the dura-mater."

Dr. E. J. McWeeney had made a microscopic examination of the tumour; the tumour consisted of sarcoma tissue, partly round and partly spindle-celled. There was rather a curious appearance, due to the presence in the tumour of bands of very tough, almost hyaline connective tissue, which cut up the sarcoma in places into alveolar-looking masses which almost suggested a cancer. The tumour was sarcomatous in nature. He thought, on the whole, that the strands were dura-matral, tough and degenerate, and separated from each other by the cells of the tumour.

MR. T. MYLES asked if any of the physicians present could tell him whether it is ever possible to make an accurate diagnosis of cerebral tumour. As to the surgical side the diagnosis is extremely difficult. He had a good while ago seen a case in Steevens' Hospital with obscure nervous symptoms. A great many medical men thought that the case coincided with Professor Charcot's description of disseminated sclerosis. *Post-mortem* examination soon afterwards disclosed a cerebellar tumour without any disseminated sclerosis.

Note on a Specimen of Complete Osseous Union of Transverse Fracture of Patella.

DR. JOHN KNOTT read notes of a case on this subject.

DR. E. H. BENNETT said that the specimen was as complete as any he had seen; it corresponded very closely indeed with the magazine plates in which there is a specimen almost identical with Dr. Knott's.

MR. MYLES, on examining the specimen, questioned whether the line of fracture along the cartilages represented a complete cleft through the entire thickening of the bone, whether it was not only a chip out of part of the bone.

SIR WILLIAM STOKES thought that there was a distinct mark of the fracture in the front of Dr. Knott's specimen.

MR. WHEELER said he had shown a specimen of bony union of the patella a good many years ago, at the Pathological Section in T.C.D. The specimen was obtained two years after the sustained injury, when death occurred from phthisis.

DR. E. H. BENNETT said that he had seen Mr. Wheeler's specimen. His specimen was one of comminuted fracture of the patella, the bone being broken into three pieces, and not a transverse fracture; such specimens were common.

DR. KNOTT having replied,

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
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Vital Statistics

For four weeks ending Saturday, June 18, 1898.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Average Rate for 4 weeks	Towns	Weeks ending				Average Rate for 4 weeks
	May 28	June 4	June 11	June 18			May 28	June 4	June 11	June 18	
23 Town Districts	22·1	20·9	23·9	19·6	21·6	Limerick -	22·5	16·8	35·1	15·4	22·4
Armagh -	7·1	21·4	7·1	21·4	14·3	Lisburn -	29·8	12·8	38·3	8·5	22·3
Ballymena	11·3	16·9	5·6	16·9	12·7	Londonderry	20·4	15·7	17·3	18·8	18·1
Belfast -	22·8	25·3	24·0	19·7	22·9	Lurgan -	18·2	13·7	18·2	9·1	14·8
Carrickfergus	5·8	5·8	11·7	23·4	11·7	Newry -	12·1	16·1	4·0	12·1	11·1
Clonmel -	19·5	24·3	24·3	19·5	21·9	Newtownards	34·0	0·0	34·0	45·4	28·3
Cork -	19·4	24·2	27·0	14·5	21·3	Portadown	43·3	18·6	30·9	0·0	23·2
Drogheda -	22·8	11·4	19·0	19·0	18·1	Queenstown	23·0	28·7	17·2	11·5	20·1
Dublin -	22·2	19·2	24·0	21·0	21·6	Sligo -	60·9	35·5	15·2	20·8	33·0
Dundalk -	12·6	8·4	12·6	12·6	11·6	Tralee -	11·2	16·8	22·4	11·2	15·4
Galway -	18·9	18·9	15·1	30·2	20·8	Waterford	21·9	17·9	37·8	27·9	26·4
Kilkenny -	14·2	23·6	33·0	23·6	23·6	Wexford -	36·1	27·1	13·5	27·1	25·9

In the week ending Saturday, May 28, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 16·0), was equal to an average annual death-rate of 16·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·4 per 1,000. In Glasgow the rate was 23·3. In Edinburgh it was 19·5.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 22·1 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in eighteen of the districts to 4·5 in Belfast—the 133 deaths from all causes registered in that district comprising 1 from measles, 1 from scarlatina, 1 from whooping-cough, 2 from diphtheria, 2 from simple continued fever, 15 from enteric fever, and 4 from diarrhœa. The 28 deaths in Cork comprise 1 from typhus and 1 from diarrhœa.

In the Dublin Registration District the births registered amounted to 203—107 boys and 96 girls; and the registered deaths to 155—83 males and 72 females.

The deaths, which are 10 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·1 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 22·2 per 1,000. During the twenty-one weeks of the current year the death-rate averaged 29·3, and was 1·2 under the mean rate in the corresponding period of the ten years 1888–1897.

As in the preceding week, only 15 deaths from zymotic diseases were registered. The number is 3 under the average for the twenty-first week of the last ten years. The 15 deaths consist of 1 from measles, 1 from scarlet fever (scarlatina), 1 from influenza, 3 from whooping-cough, 4 from diphtheria, 3 from enteric fever, 1 from dysentery, and 1 from diarrhœa.

Twenty-one cases of scarlatina were admitted to hospital, being 1 over the admissions in the preceding week and 6 over those in the week ended May 14th. Thirty-three scarlatina patients were discharged, and 143 remained under treatment on Saturday, being 12 under the number in hospital at the close of the preceding week. There were, in addition, 21 convalescents at Beneavin, the Convalescent Home of Cork-street Fever Hospital.

Seventeen cases of enteric fever were admitted to hospital, against 14 in the preceding week. Thirteen patients were discharged, 2 died, and 75 remained under treatment on Saturday, being 2 over the number in hospital on that day week.

The hospital admissions for the week included also 2 cases of typhus—the only cases of that disease in hospital on Saturday.

Diseases of the respiratory system caused 27 deaths, being 5 over the number for the preceding week, and equal to the average for the twenty-first week of the last ten years. The 27 deaths comprise 16 from bronchitis and 10 from pneumonia.

In the week ending Saturday, June 4, the mortality in thirty-three large English towns, including London (in which the rate was 16·1), was equal to an average annual death-rate of 16·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·0 per 1,000. In Glasgow the rate was 23·1, and in Edinburgh it was 23·7.

The average annual death-rate in the twenty-three principal town districts of Ireland was 20·9 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in fourteen of the districts to 9·4 in Kilkenny—the 5 deaths from all causes registered in that district comprising 2 from scarlatina. Among the 148 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 3 from whooping-cough, 1 from diphtheria, 1 from simple continued fever, 10 from enteric fever, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 242—125 boys and 117 girls; and the registered deaths to 132—54 males and 78 females.

The deaths, which are 31 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 19·7 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 19·2 per 1,000. During the twenty-two weeks of the current year the death-rate averaged 28·9, and was 1·3 under the mean rate in the corresponding period of the ten years 1888–1897.

Only 14 deaths from zymotic diseases were registered, being 1 under the low number for each of the two weeks preceding, and 5 below the average for the twenty-second week of the last ten years. They comprise 1 from scarlet fever (scarlatina), 1 from influenza 5 from whooping-cough, 2 from enteric fever, 2 from diarrhœa, and 1 from erysipelas.

The number of cases of scarlatina admitted to hospital was 18, being 3 under the admissions for the preceding week, and 2 under the number for the week ended May 21. Twenty-four scarlatina patients were discharged, 1 died, and 136 remained under treatment on Saturday, being 7 under the number in hospital at the close of the preceding week. This number is exclusive of 21 convalescents at Beneavin.

Only 10 cases of enteric fever were admitted to hospital, being a decline of 7 as compared with the admissions in the preceding week. Nine patients were discharged, 1 died, and 75 remained under treatment on Saturday, being equal to the number in hospital on that day week.

Deaths from diseases of the respiratory system fell to 16, or 12 under the average for the corresponding week of the last ten years. The 16 deaths comprise 8 from bronchitis and 6 from pneumonia.

In the week ending Saturday, June 11, the mortality in thirty-three large English towns, including London (in which the rate was 16·3), was equal to an average annual death-rate of 16·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·3 per 1,000. In Glasgow the rate was 23·3, and in Edinburgh it was 21·1.

The average annual death-rate in the twenty-three principal town districts of Ireland was 23·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in sixteen of the districts to 7·1 in Armagh—the only death registered in that district having been caused by diphtheria. Among the 140 deaths from all causes registered in Belfast are 2 from whooping-cough, 16 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 207—107 boys and 100 girls; and the registered deaths to 168—79 males and 89 females.

The deaths, which are 17 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·1 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 24·0 per 1,000. During the first twenty-three weeks of the present year the death-rate averaged 28·7, and was 1·2 under the mean rate in the corresponding period of the ten years 1888–1897.

Only 10 deaths from zymotic diseases were registered, being 4 under the low number for the preceding week, and 7 below the average for the twenty-third week of the last ten years. They comprise 4 from influenza and its complications, 2 from whooping-cough, 1 from cerebro-spinal meningitis, 1 from enteric fever, and 1 from diarrhœa.

Twenty-two cases of scarlatina were admitted to hospital, being 4 over the admissions in the preceding week. Twenty-five scarlatina patients were discharged, 1 died, and 132 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week. There were 20 convalescents, in addition, at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital rose to 20. Eighteen patients were discharged, and 77 remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week.

Diseases of the respiratory system caused 30 deaths, being 14 over the number for the preceding week, and 5 over the average for the corresponding week of the last ten years. The 30 deaths consist of 18 from bronchitis, 9 from pneumonia, and 3 from croup.

In the week ending Saturday, June 18, the mortality in thirty-three large English towns, including London (in which the rate was 13·8), was equal to an average annual death-rate of 14·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·2 per 1,000. In Glasgow the rate was 21·2 per 1,000, and in Edinburgh it was 19·2.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 19·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·2 per 1,000, the rates varying from 0·0 in eighteen of the districts to 7·1 in Armagh—the 8 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 115 deaths from all causes registered in Belfast are 1 from measles, 1 from whooping-cough, 2 from diphtheria, 1 from simple continued fever, 6 from enteric fever, and 4 from diarrhœa. The 21 deaths in Cork comprise 1 from typhus and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 204—110 boys and 94 girls; and the registered deaths to 147—73 males and 74 females.

The deaths, which are 20 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·9 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 21·0 per 1,000. During the first twenty-four weeks of 1898 the death-rate averaged 28·4, and was 1·2 under the mean rate in the corresponding period of the ten years 1888–1897.

Only 10 deaths from zymotic diseases were registered, being 9 below the average for the twenty-fourth week of the last ten years. The 10 deaths comprise 1 from whooping-cough, 4 from enteric fever, and 1 from diarrhœa.

The number of cases of scarlatina admitted to hospital was 18, being 4 under the admissions in the preceding week, and equal to the number admitted during the week ended June 4. Thirty scarlatina patients were discharged, and 120 remained under treatment on Saturday, being 12 under the number in hospital at the close of the preceding week. There were besides 16 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital fell to 10. Twenty-one patients were discharged, 1 died, and 65 remained under treatment on Saturday, being 12 under the number in hospital on that day week.

Only 15 deaths from diseases of the respiratory system were registered, being 9 below the average for the corresponding week of the last ten years, and 15 under the number for the previous week. They consist of 10 from bronchitis and 5 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of June,* 1898.

Mean Height of Barometer,	29·973 inches.
Maximal Height of Barometer (14th, 9 a.m.),	30·357 „
Minimal Height of Barometer (25th, 7 30 a.m.),	29·330 „
Mean Dry-bulb Temperature,	57·4°
Mean Wet-bulb Temperature,	53·8°.
Mean Dew-point Temperature,	50·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·368 inch.
Mean Humidity,	78·0 per cent.
Highest Temperature in Shade (on 17th),	74·9°.
Lowest Temperature in Shade (on 2nd),	41·8°.
Lowest Temperature on Grass (Radiation) (on 2nd),	39·9°.
Mean Amount of Cloud,	58·5 per cent.
Rainfall (on 14 days),	1·547 inches.
Greatest Daily Rainfall (on 5th),	·429 inch.
General Directions of Wind,	S.W., N.W., W.

Remarks.

June, 1898, may be described as an average month. Atmospheric pressure, air temperature, and rainfall were all about the normal value. Like June, 1897, the month must be regarded as a favourable one, conducive to health and propitious to vegetation. It was, however, eminently changeable, and the fluctuations of temperature were abrupt and considerable.

In Dublin the arithmetical mean temperature (58·0°) was above the average (57·8°) by 0·2°; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 57·4°. In the thirty-three years ending with 1897, June was coldest in 1882 (M. T.=55·8°), and in 1879 ("the cold year") (M. T.=55·9°). It was warmest in 1887 (M. T.= 62·3°); in 1865 (M. T.=61·0°); and in 1896 (M. T.=61·4°).

The mean height of the barometer was 29·973 inches, or 0·056 inch above the corrected average value for June—namely, 29·917 inches. The mercury rose to 30·357 inches at 9 a.m. of the 14th, and fell to 29·330 inches at 7 30 a.m. of the 25th. The observed range of atmospheric pressure was, therefore, 1·027 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 57·4°, or 6·8° above the value for May, 1898. Using the formula, *Mean Temp.= Min. + (max. — min.* × ·465), the value was 57·5°, or 0·3° above the average mean temperature for June, calculated in the same way, in the twenty-five years, 1865–89, inclusive (57·2°). The arithmetical mean of the maximal and minimal readings was 58·0°, compared with a twenty-five years' average of 57·8°. On the 17th the thermometer in the screen rose to 74·9°—wind, W.; on the 2nd the temperature fell to 41·8°—wind, N. The minimum on the grass was 39·9°, also on the 2nd.

The rainfall amounted to 1·547 inches, distributed over 14 days. The average rainfall for June in the twenty-five years, 1865–89, inclusive, was 1·817 inches, and the average number of rainy days was 13·8. The rainfall, therefore, was below, while the rainy days were equal to, the average. In 1878 the rainfall in June was very large—5·058 inches on 19 days; in 1879, also, 4·046 inches fell on 24 days. On the other hand, in 1889, only ·100 inch was measured on 6 days; in 1887, the rainfall was only ·252 inch, distributed over only 5 days. In 1897, 3·257 inches fell on 20 days.

High winds were noted on 8 days, but the force of a gale was on no occasion attained. The atmosphere was more or less foggy on the 8th. Temperature reached or exceeded 70° in the screen on 4 days, compared with 17 days in 1887, only 1 day in 1888, and 6 days in 1897. A thunderstorm occurred on the 12th, and thunder was heard on the 26th. Hail fell on the 1st and 22nd.

Very unsettled, squally, cold, and showery weather characterised the period ending Saturday, the 4th. The showers were accompanied by thunder and lightning at many British stations on Wednesday, the 1st, and Thursday, the 2nd. This last-named day proved unexpectedly fine and sunny in Ireland, a depression which had advanced from the N.W. having "turned tail" and retreated towards N. and N.W. along the coasts of Denmark and Norway. On Friday, however, a new low pressure area appeared to the northward of Ireland, and this brought about a renewal of unsettled weather. The wind at the same time backed towards S.W. and S., so that there was a distinct advance in temperature, and the period closed with a prospect of more summerlike weather. In Dublin the barometer ranged between 29·669 inches at 9 p.m. of Wednesday (wind, N.W.) and 29·960 inches at 9 p.m. of Thursday (wind, N.W.). On Thursday the screened thermometers fell to 41·8°, on Saturday they rose to 61·8°. The rainfall was ·187 inch on three days, ·124 inch being measured on Saturday. N.W. to S.W. winds prevailed.

Commencing with gloomy, unsettled weather and heavy rains, the week ended Saturday, the 11th, proved fine and summerlike in Ireland and Scotland. In the S.E. of England, however, the weather was kept in an unsettled, dull, and rainy state until Friday by the approach of a shallow depression from the southward on Wednesday. On Sunday morning the barometer was low (29·54 inches at Valentia) off the S.W. of Ireland, southerly winds prevailed, accompanied by rain in many places. On Monday morning a V-shaped depression lay over Ireland, where the weather remained in a broken, rainy condition, while thunder and lightning occurred very generally throughout England. A brisk increase of atmospheric pressure set in as the day advanced, so that by Tuesday morning baric gradients had become very slight over the British Islands, and there were signs of a change to finer and more summerlike conditions. At 8 a.m. of Wednesday a shallow depression was observed over the S.W. and centre of France, moving slowly northeastwards. This system became stationary over Belgium on Thursday, and caused gloomy wet weather over the English Channel, the S.E. of England, the North of France, Belgium, and Germany. The rainfalls were very heavy in several places, 1·31 inches being registered at the North Foreland on Friday morning and 1·67 inches at Yarmouth. In Ireland beautiful, warm, and summerlike weather was enjoyed on and after Tuesday. In

Dublin the mean atmospheric pressure was 30·014 inches, the barometer ranging from 29·555 inches at 9 a.m. of Monday (wind, S.) to 30·242 inches at 9 a.m. of Thursday (wind, calm). The corrected mean temperature was 57·7°. The mean dry-bulb reading at 9 a.m. and 9 p.m. was 57·5°. The screened thermometers fell to 48·1° on Tuesday, and rose to 71·0° on Saturday. Rain fell on two days to the amount of ·549 inch, ·429 inch being measured on Sunday. Southerly and southeasterly winds predominated.

Except on Sunday and Saturday, very fine weather prevailed in Ireland during the week ended Saturday, the 18th. In England it was dull, cold, and generally unseasonable until Thursday. Early on Sunday very electrical clouds were seen over Dublin, and there was much distant thunder between 9 and 10 a.m. The rolling of thunder began again at midday, and at 2 p.m. there was a heavy thunderstorm to the S.W. of the city, accompanied by drenching rain in places. No rain fell to the S.E., in Fitzwilliam Square the measurement was only ·028 inch, at Glasnevin Botanic Gardens ·060 inch, at the Ordnance Survey Office, Phœnix Park, ·200 inch. The evening was cool and fine. During the storm the higher clouds came from S.E. or S.S.E., the lower stratum drove down from N. or N.N.E. A period of cloudy, cool weather followed, and this in turn gave place to bright, quiet, warm weather, lasting until Friday night. On the day named the thermometer rose to 74·9° in the screen. Saturday was cloudy and blustering, with light showers. The dull, cold weather experienced in England was caused by depressions lying over the South of France, Spain, and Italy, where heavy rains fell. In Dublin the barometer rose to 30·357 inches at 9 a.m. of Tuesday (wind, N.E.) and fell to 30·062 inches at 9 a.m. of Saturday (wind, W.S.W.). Its mean height was 30·251 inches. The corrected mean temperature was 58·6°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 59·6°. The screened thermometers fell to 46·8° on Wednesday and rose to 74·9° on Friday. Rain fell on two days to the amount of ·087 inch, of which ·059 inch was measured on Saturday. Thunder and lightning occurred on Sunday. N.E. and afterwards W. winds prevailed.

Fair and warm at first, the weather during the week ended Saturday, the 25th, gradually became very unsettled, squally, showery, and cold. Only on Sunday and for a short time on Thursday morning was the distribution of atmospheric pressure anticyclonic, and then only in the south. For the rest, progressively deepening depressions passed eastward across the northern parts of the Kingdom, and on Saturday morning the barometer was down to 29·28 inches at Nairn, and as low as 29·33 inches even in Dublin. Sunday was a fine, warm day—the maximal temperature in Dublin was 72·3°. On Monday the maximum was 72·6°, there were passing showers and fine intervals. Tuesday was fine but cloudy; towards evening temperature gave way fast. Heavy showers of rain and hail fell on Wednesday. Thursday afternoon proved rainy. Friday was rainy to showery and cold, but with intervals of bright sunshine. Rain fell heavily on Saturday forenoon, when the wind drew round to N. In Dublin the mean height of the barometer was 29·757 inches, pressure ranging between 30·167 inches at 9 a.m. of Sunday (wind, N.W.) and 29·339 inches at 7 30 a.m. of Saturday (wind, W.N.W.). The corrected mean temperature was 58·6°. The mean dry-bulb reading at 9 a.m. and 9 p.m. was 57·6°. The screened thermometers rose to 72·6° on Monday and fell to 46·9° on Thursday. Rain fell on five days to the amount of ·659 inch, ·191 inch being measured on Saturday. Westerly winds prevailed.

Generally favourable, yet changeable, was the weather of the closing period of the month—the 26th to the 30th inclusive. At the beginning an atmospheric depression lay exactly over England, where the weather was broken, cold and showery, with hail and thunder in many places. In Ireland northerly winds prevailed, and conditions were more genial. Thunder was heard in Dublin on the evening of Sunday, the 26th. Monday and Tuesday were fine days. On Wednesday shallow depressions, passing eastwards, caused changeable, showery weather. There was, however, a general rise of temperature. Thursday was cloudy, but fine. The extremes of temperature were both recorded on Tuesday—highest, 69·0°; lowest, 46·3°. Rain fell on two days to the amount of ·065 inch, ·051 inch being registered on Wednesday. The barometer rose from 29·647 inches at 9 a.m. of Sunday (wind, N.), to 30·197 inches at 9 p.m. of Thursday (wind, W.N.W.).

The rainfall in Dublin during the six months ending June 30th amounted to 12·115 inches on 98 days, compared with 13·950 inches on 113 days in 1897, 7·854 inches on 84 days in 1896, 12·282 inches on 80 days in 1895, 14·361 inches on 109 days in 1894, 9·624 inches on 78 days in 1893, 11·770 inches on 97 days in 1892, 8·748 inches on 77 days in 1891, 13·413 inches on 94 days in 1890, only 6·741 inches on 67 days in 1887, and a twenty-five years' average of 12·313 inches on 95·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 1·055 inches distributed over 10 days. Of this quantity ·345 inch fell on the 24th. The total fall since January 1 has been

13·500 inches on 88 days, compared with 18·125 inches on 106 days in the first six months of 1897, 7·356 inches on 61 days in the same period of 1896, 14·270 inches on 67 days in 1895, 17·381 inches on 96 days in 1894, and 11·776 inches on 75 days in 1893.

The rainfall at Cloneevin, Killiney, Co Dublin, amounted to 2·03 inches on 15 days. The greatest fall in 24 hours was ·91 inch on the 5th. The average rainfall for June in the 12 years, 1885–1896, was 1·515 inches on 11·7 days. In 1897, 3·59 inches fell on 20 days, in 1896 1·65 inches fell on 13 days. Since January, 1898, 13·10 inches of rain have fallen at this station on 97 days, compared with 14·80 inches on 113 days in the corresponding six months of 1897.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 2·459 inches on 14 days, compared with 4·078 inches on 15 days in June, 1897. On the 5th, 1·230 inches were measured, and on the 24th, ·352 inch. The maximum temperature in the shade was 73·0° on the 17th, the minimum temperature in the shade was 41·0° on the 2nd and 3rd. At this climatological station the rainfall for the six months ending June 30, amounted to 14·918 inches on 88 days, compared with 18·372 inches on 102 days in the same period of 1897.

LETHAL EFFECT OF CARBOLIC ACID ON AN INFANT.

M. Bozdanik (*Wiener Medical Presse*) reports a case of fatal poisoning of an infant by the application of a three per cent. lotion of carbolic acid to a circumcision wound. The lotion was applied on cotton wool by the surgeon immediately on the completion of the operation; some hours afterwards the child passed smoky urine; the same evening the wound was redressed with the lotion by the nurse in attendance. Death followed in forty-eight hours from the time of the first dressing.

A METHOD OF EXAMINING THE LARYNX IN INFANTS.

In this method the infant is supported in the usual position for laryngoscopy. The index finger of the left hand is placed well into the mouth, and the terminal phalanx hooked around the hyoid bone, which is pulled forward. The rest of the finger acts as a tongue-depressor and the knuckle as a gag. The left thumb placed under the chin serves to steady the head. If a small laryngeal mirror be now introduced in the usual way the larynx can be quite easily seen. The method causes no pain.—Lack, *Journal of Lar., Rhin., and Otol.*

PERISCOPE.

A CASE OF BLACK TONGUE.

Felix Semon (*The Journal of Lar., Rhin., and Otol.*, March, 1897) reports the case of a man of forty years affected with a large patch of enormously elongated, hair-like, inky black papillæ in the region of the papillæ circumvallatæ. Under the local use of a 5 per cent. ethereal solution of salicylic acid, mixed with a 5 per cent. collodion solution, and followed by an application of peroxide of hydrogen by means of a plug of cotton wool applied to the affected region several times a day, so much improvement had resulted that only the traces of the affection were still visible.

RUPTURE OF THE HEART BY A BLOW WITH A STICK—SURVIVAL FOR OVER THREE HOURS.

On the 1st December, 1895, notice was received by Surgeon-Major J. B. Gibbons, I.M.S., of a body at the morgue, and the following particulars of the cause of death were furnished by the Superintendent, 2nd Division, Calcutta Police :—"Deceased, a cooly, aged about thirty years, is said to have been struck with a bamboo stick at about 9 30 p.m. (30–11–'95). He fell down immediately on receiving the blow and vomited. He was removed to the Medical College Hospital, where he died at about 12 40 p.m." The *post-mortem* examination was made at 9 a.m. on the 1st December. The body was fairly nourished, rigor mortis present. There were no external marks of violence, except a few slight abrasions. On opening the abdomen the stomach was seen to be greatly distended. There were about 3 ozs. of serous fluid in the peritoneal cavity. The spleen was uninjured and healthy. On removing the front of the thorax the pericardial sac was found full of blood partly clotted. Fourteen ounces were measured. The heart was contracted, and there was a small irregular-shaped rupture in the apex, communicating with the right ventricle. The cavities of the heart were nearly empty. The rupture was about ¼ inch long, irregular in shape, which (and the contracted state of the organ) prevented exact measurement. The muscle fibres appeared quite healthy, and the wall of the right ventricle of usual thickness, except at the apex, where, at the site of the rupture, the layer of muscle was very thin—much thinner than in another heart examined at the same time. I estimated the thickness of muscle fibre to be equal to that of stout brown paper. The muscle about the rupture was healthy, and there were no signs of myocarditis, recent or of old standing. The quantity of fat on the heart was small, as is usual in men of the class to which deceased belonged; arteries and valves of the heart quite healthy.—*Indian Medical Gazette.*

TOXIC EFFECTS OF ALKALINE LYE.

Two cases of severe stricture following the corrosive action of lye has been judged unmanageable by treatment with sounds by a number of physicians and surgeons. Following the practice of König and others, Zeehnisen had silver balls prepared of a diameter ranging from 2 to 7 mm. A silk thread was passed through a central hole in each of these, and the smallest ball was swallowed at night as far as it would go, the thread being fastened above. Next morning the ball was found to have passed into the stomach, and was withdrawn. The process was repeated, with increasing size of silver balls, and in each case, with ambulatory treatment, the patient advanced to such a condition that a large tube could be readily passed into the stomach.—*Centralblatt für innere Medicin.*

A VALUABLE GIFT.

Dr. Nicholas Senn has recently presented to the Newberry Library, Chicago, the library of the late Professor Du Bois Reymond, consisting of 4,000 volumes and 13,000 pamphlets, mostly on the subject of physiology. Dr. Senn had previously presented to the same institution the library of Dr. Wilhelm B. Baum, of Göttingen, and many valuable works from his private collection, including the manuscripts of some sixty works from his own hand. At present the medical department of the library consists of over 30,000 volumes and 22,000 pamphlets, nd over 400 periodicals embracing all departments of medical science *Philadelphia Medical Journal.*

A PROLIFIC RACE.

The size of families appears to be attracting some attention in Germany. It is also a question not without importance in this country. In Berlin the Municipal Year-Book for 1896, just issued, gives some curious facts concerning the size of families in that city. In that year a lady presented her husband with his twentieth living child; other families numbered 19, 18, and 17; while 32 registered their sixteenth, 63 their fifteenth, 83 their fourteenth, and no fewer than 126 their thirteenth child. In spite of these statistics, however, early marriages are rarer in Berlin than in London. The husbands under 20 years of age in 1896 were 62, and only 63 wives were under 17.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"*Tabloid*" *Hypophosphites Compound.*

This is the latest addition to the long list of "Tabloids" designed by Messrs. Burroughs, Wellcome & Co., of Snow-hill Buildings, London, E.C.:—

"Tabloid" Hypophosphites Compound provides a method of administering this combination which possesses obvious and specific advantages. The full therapeutic activity of all the constituents is obtained, and there is no danger of an overdose of strychnin either through a mistake in measurement or through precipitation. In the "tabloid" preparation the dose is constant and unvarying, and the preservation of the ingredients is assured.

Many patients who are actively engaged in business or professional life, and who cannot carry about the ordinary forms of medicine, can take "Tabloid" Hypophosphites Compound regularly and without inconvenience. For those patients, too, suffering from various functional nerve disorders who are ordered long periods of travel, "Tabloid" Hypophosphites Compound provides a means of prescribing the hyphosphites which is reliable and convenient, and encourages regular administration.

Two strengths are issued, each in bottles of 25 and 100.

"*Tabloid*" *Hypophosphites Compound*, gr. 1½, contains gr. $\frac{1}{128}$ of strychnin hypophosphite, together with the combined hypophosphites of calcium, potassium, manganese, iron and quinine, and is equivalent to dr. ½ of standard Compound Syrup of Hypophosphites.

"*Tabloid*" *Hypophosphites Compound*, gr. 3, contains gr. $\frac{1}{64}$ of strychnin hypophosphite, together with the combined hypophosphites of calcium, potassium, manganese, iron and quinine, and is equivalent to dr. 1 of standard Compound Syrup of Hypophosphites.

Erratum.—In the July number, page 45, line 3 from top of page, for "*dissipere*," read "*desipere*."

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PART I.

ORIGINAL COMMUNICATIONS.

ART. X.—*Presidential Address to the Congress of Public Health, held under the auspices of the Royal Institute of Public Health, at Dublin, August 18th to 23rd, 1898.*

By SIR CHARLES A. CAMERON, M.D.; D.P.H., Camb.; M.R.C.P.I.; F.I.C.; Ex-President, Hon. Dip. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee.

MY first duty on this occasion is to express my warmest thanks to the Fellows of the Royal Institute of Public Health for the honour which they have conferred upon me in selecting me to preside at this important Hygienic Congress. It is by no means the only compliment which the Institute have paid me, for I gratefully bear in mind that four years in succession they unanimously elected me to be their President. I esteem this action of the Institute all the more from the circumstance that their headquarters are situated in London, whilst I am a resident in Dublin. In the six millions of people in that vast city no difficulty would have been experienced in securing for the presidency of the Institute men of the highest repute in the domain of science. I rejoice to know that under the leadership of my distinguished predecessors, Sir Henry Littlejohn and Professor Smith, the career of the Institute has been one of uninterrupted success, and that at this moment they occupy a high position amongst the many useful organisations in these countries which are supported by voluntary efforts and are without State aid.

My next duty is the pleasant one of welcoming most warmly, on behalf of the Reception Committee of the Congress—and I may indeed say on the part of the citizens of Dublin—the visitors who have come to this city from England, Scotland, Wales, and the Irish provinces to take a part in the proceedings of this Congress. Amongst them are the bearers of names known and respected in many lands. They have done noble work in devising and carrying into effect measures for the mitigation of human suffering, in disease, for the prolongation of life, and for the amelioration of the conditions under which the lower and more dependant classes of the population exist. In our forthcoming conferences their voices will be heard earnestly and eloquently advocating the adoption of every means by which the moral and physical improvement of our race might be promoted. I use the word moral advisedly, for assuredly the strict observance of the laws of physical health cannot fail to exercise a beneficial effect upon our morals. Truly has it been said that cleanliness is next to godliness, and we cannot forget that the first code of sanitary laws came to us from a divine source. The lessening of overcrowding in the tenement houses, the better care of the children of the poor, the multiplication of open spaces and recreation grounds, the provision of means of innocent amusements, cheap baths and wash-houses, healthful dwellings at moderate rents, are all agents for improving the *morale* and *physique* of the people.

HIGH DEATH-RATES IN TOWNS.

The aggregation of a large number of people upon a limited area operates injuriously upon their health, and lessens the mean duration of their lives. Many years ago Doctor—now Sir William—Gairdner, of Glasgow, pointed out that whilst the death-rate in England was 15 per 1,000 persons living on every square mile, it rose as the density of population increased until it became 27 and upwards when the population came to be 2,900 per square mile.

The death-rates in purely rural districts have not been very largely reduced since the beginning of the present century; in the towns the case has been different. Before the system of national registration of deaths was adopted there existed the means of closely approximating the death-rates in towns. From the "Bills of Mortality" of London we learn that the death-rate in that city during the period 1728 to 1780 was about 50 per 1,000 persons living. The deaths therefore greatly exceeded the births, and were it not for the great immigration into the city from the country its population would have become extinct, as the mean age at death of the citizens was only 20 years. According to Sir William Petty, the deaths in London in six years of the seventeenth century exceeded the births by about five-eighths. He showed that at the same period the same relative proportions between births and deaths existed in Dublin.

For centuries the urban death-rates greatly exceeded the rural rates, in many cases by from 20 to 50 per cent.; but during the last 40 years they have been approximating, although a gap far too wide still divides them. In 1896 the estimated population of England and Wales amounted to 30,717,355, of whom 14,883,806 resided in 110 town-districts, each containing more than 35,000 inhabitants, and 15,833,549 in country districts and towns and villages having a smaller population than 35,000. The death-rate in the urban districts was 18, and in the rural districts 15·3 per 1,000—the difference being 2·7 per 1,000. The mean rates in the previous 10 years were 19·7 and 17·2—a difference of 2·5. Let us compare these figures with the statistics of the decade ended in 1860; in that period the urban rate was 24·7 and the rural 19·9, the difference being 4·8.

Gratifying as it is to find the gulf between the urban and country death-rates narrowing, it is unsatisfactory to observe that the rate of mortality should be so much greater in some towns than in others. In 1897 the rate in Eastbourne was 8·2, in Bournemouth 10·1, Croydon 13·62, and even in the manufacturing town of Darlington 15, whilst in Liverpool it was 26·76, and in Salford 26·88. Brighton, a most fashionable town with a well-to-do population, had a death-rate of 15·23; but Wakefield, Stockton-on-Tees, and Jarrow—all manufacturing towns—had almost the same rate.

CAUSES OF THE HIGH URBAN DEATH-RATES.

The causes which raise the urban death-rates so much above the rural ones are numerous, and, perhaps, not fully discovered. The causes of the enormous difference between the bills of mortality of the healthiest and least healthy of the towns have not been fully investigated. The contagion of the fevers must clearly be more readily conveyed from the sick to the sound in towns owing to the closer contact of the people. The town atmosphere is less pure than the air of the country; its soils are generally contaminated with filth. In its narrow streets and courts the direct sunlight—so necessary to maintain the purity of the air—and thorough ventilation are wanting. The effete matter from dwellings and workshops, and the sweepings of the streets, are sometimes allowed to accumulate, and to pollute the air by their noisome exhalations. Many of the occupations of townspeople are of a more or less unhealthy nature, and the majority of them are sedentary. The outdoor life of the farmer and agricultural labourer is obviously more healthy than that of the town bakers, shoemakers, tailors, mill-workers, &c. The cabin of the peasant may be, and indeed too often is, a wretched dwelling, but it is at least surrounded by the pure and open atmosphere. In the towns a dozen families often occupy as many rooms in the same house, whilst hundreds of similar houses invest it on all sides. In the narrow back street and close court we see the children of the poor, with bleared eyes, colourless lips and pallid faces, pining for fresh air and a view of the wide canopy of the sky. How different is not the lot of the country child and young person! They see the hills resplendent with the sheen of the golden gorse, they inspire air fragrant with the perfume of the hawthorn and of many a sweetly odorous flower, they roam over fields of emerald green, through shady woods and by purling brooks and silver rivers, whilst the air is filled with the melody of the feathered warblers. With such environments the country child develops into a strong and healthy adult.

We can hardly expect to make the conditions of infantile life so healthful in town as they are in the country, but much can be done to brighten the life of the children of our great towns, to give a roseate tinge to their pale cheeks, and to strengthen and develop their muscles. Their dwellings should be improved, and places for their recreation in the open air liberally provided. The Earl of Meath has generously established in Dublin two gymnasia and playgrounds for children, and the Corporation are providing a gymnasium on the open space formed by the removal of an old prison in Green-street. Gymnasia for children are, however, required in all parts of this city and of other cities. As the child is in one sense the father of the man, every effort should be made in favour of the physical, moral, and intellectual culture of those who are to form the future men and women of the nation.

THE SANITARY CONDITION OF TOWNS IMPROVING.

The appallingly high death-rates in towns which continued for many centuries have greatly decreased in the present one. The improvement is partly due to greater attention to personal hygiene and a higher standard of comfort, partly and chiefly to improved public sanitation.

The "masses" are now on the whole better fed than they were formerly, their hours of labour are less, and they enjoy more holidays. The causes which rendered so many of the handicrafts unhealthy and even dangerous have been removed, or their effects lessened.

Before the second half of the present century the Public Health Acts enacted were few in number, and, as a rule, were not mandatory on the local authorities. The English Public Health Act of 1872, amended in 1875, and the Irish Public Health Act of 1875, amended in 1878, were the most comprehensive and valuable sanitary laws ever put upon the statute books of these realms, largely owing to the compulsory nature of many of their sections. Under the provisions of these and several subsequent Acts a great improvement has been effected in nearly all the large towns of these countries.

During the ten years ended in 1850 the mean annual death-rate in London was 24·8 per 1,000 persons living; in the decade ended in 1896 the rate was 19·9, or 4·9 per 1,000 less than in the former period. In 1897 the rate was only 17·7, excluding the deaths of strangers in London.

In Glasgow, where vast sums have been expended in the clearing of unhealthy areas and the erection of improved dwellings for the working classes, a great decrease has taken place in the general and zymotic death-rates. In the ten years ended in 1866 the deaths from all causes were in the ratio of 30·2 per 1,000 of the population; in the five years ended in 1897 the rate was only 21·8.

The death-rate in Liverpool in the years 1866 to 1875 was 31·3 per 1,000; in the years 1887 to 1896 it was 25·7, and in 1897, 24·4. The Manchester death-rate was 31 in 1866–1875; in 1887–1896, 25·3; and in 1897, 23·1. Similar statistics could be quoted in reference to almost every other large town.

THE INCREASE IN THE ENGLISH URBAN POPULATION HAS NOT CAUSED AN INCREASED DEATH-RATE.

In all parts of the world the mean duration of human life is decidedly less in the towns than in the country. In comparing the vital and mortal statistics of countries the relative proportion of their urban and rural populations is a factor of considerable importance. If in one country only 1 in very 10 of the inhabitants lives in a town, and in another country 1 in 5, then, *cæteris paribus*, a lower death-rate might naturally be expected as regards the former country.

In England by far the larger proportion of the people are located in the towns. In the middle of May of the present year the population of the urban registration districts numbered 21½ millions out of a population of 31,397,078. What a contrast does not this enormous town population present to that of other countries, say to Russia! Of the population of that empire, which numbered last year 126,411,736, only 16,289,184 resided in the towns, some of which were indeed mere villages. Only 8 of the towns had a population exceeding 180,000 each.

Notwithstanding the fact that an increase in the density of a population is unfavourable to health, the rapid increase in the English urban population has not sensibly counteracted the good effects produced by improved public and private hygiene. The density of the population of London has been doubled since 1851. It is truly wonderful that its vast population of 6,291,667, located on only 693 square miles, should have in 1897 so low a death-rate as 17·7 per 1,000. This rate is not greater than that of a fairly healthy rural district. England well deserves the name she has received as the birth-place and home of sanitary science and practice.

That the health of the English people continues to improve, the following statistics prove:—

Mean Annual Death-rate in England and Wales.

1847–1850, 23·2; 1851–1860, 22·2; 1861–1870, 22·5; 1871–1880, 21·4; 1881–1890, 19·1; 1891–1896, 18·45.

The reduction in the death-rate has been chiefly effected by the improved state of the public health in towns.

Mean Annual Death-rate in the Towns.

1851–1860, 24·7; 1861–1870, 24·8; 1871–1880, 23·1; 1881–1890, 20·3; 1891–1896, 19·24; 1897, 16·84.

In the period 1851–1870 the deaths in the towns were 25 per cent. greater than the deaths in the country for equal numbers of the people; in the period 1871–1896 the excess was reduced to 13·5 per cent., or nearly one-half.

En passant, I may here remark that the death-rate is much lower amongst females than males. It may interest intending benedicts, and strengthen their resolution, to learn that the mean duration of life is greater amongst married men than is the case with celibates. No doubt the former are taken better care of.

Attention has been called to the decided decline in the birth-rate not only in the United Kingdom but in most European countries; but it seems clear that such a decline must necessarily follow a diminished rate of mortality, resulting in an increase of the numbers of the population upon which the birth-rate is calculated. The lowest birth-rates ever registered in England were in 1894 and 1896, and in these years the lowest death-rates were also recorded.

MORTAL STATISTICS OF IRELAND.

The death-rate in Ireland is for the whole country very low. In the 10 years ended in 1896 it was only 18. In the same period the rate in Hungary was 35·6, and in Austria 30. The low rate in Ireland is largely due to the circumstance that by far the larger portion of the population reside in the open country. The urban bills of mortality are very high. In the decade ended in 1897 the death-rate was 24·65 per 1,000 in the 23 largest towns. Their zymotic death-rate was 2·64. There is therefore a great difference between town and country death-rates in Ireland.

STATE OF PUBLIC HEALTH IN DUBLIN.

As this Congress is meeting in Dublin it seems fitting that some account of the sanitary state of the city should be given to it. Thirty-two years ago the sanitary staff of Dublin consisted of one whole man (an Inspector of Nuisances), and a small part of another man (the Secretary to the Markets Committee). At present the staff consists of a Superintendent Medical Officer of Health, who holds also the positions of Public Analyst and Executive Sanitary Officer; 15 District Medical Officers of Health, who hold that position *ex officio* as Poor-law Medical Officers; a Sanitary Engineer; a Superintendent and Assistant-Superintendent of Sanitary Sub-Officers—*i.e.*, Nuisance Inspectors; 23 Sanitary Sub-Officers; 3 Inspectors of Dairies; 3 Food Inspectors; an Inspector of Slaughterhouses; 2 Inspectors (one a lady) under the provisions of the Shop Hours Act, and about a dozen persons, exclusive of whitewashers and charwomen, engaged in disinfection operations and the removal of fever patients to hospital. The disinfecting premises have recently been improved and enlarged at a cost of £2,000, and a large isolated house, the property of the Corporation, has been fitted up at a cost of £500 as a refuge for persons whose dwellings are undergoing disinfection. Since 1895 no person has been appointed a Sanitary Inspector unless he had proved his fitness for that position by a competitive examination. Sixteen of the Sanitary Inspectors hold certificates of competency, granted to them, after examination, by the Royal Institute of Public Health.

The estimated expense of the sanitary department, exclusive of the cost of making and maintaining sewers, was, in 1897, £23,607. Salaries and wages amounted to £9,068 10s. £1,040 were, however, received as a Parliamentary grant in aid of the salaries of the Sanitary Officers, and a considerable revenue is derived from the baths and wash-houses, and other sources.

Loans for the following purposes have been sanctioned, and all but a small portion obtained and expended:—For clearing unhealthy areas (on which the Dublin Artisans' Dwellings Company have since erected houses) £54,200; artisans' and labourers' dwellings, £137,323; new streets, by which slums were cleared away, £116,000; public abattoir, £16,700; baths and wash-houses, £12,500; improvement in disinfection house, £2,000; a refuge for persons whose houses are being disinfected, £500; a mortuary, £200; open spaces, £2,900; offices for sanitary department and city laboratory, £10,000; underground sanitary accommodation, £2,200 = £354,523. For the following purposes, which also tend to improve the public health, loans have been sanctioned and nearly altogether obtained:—Sewers, and works connected with them, £62,107; works in connection with public and domestic scavenging, £34,050; paving, flagging, and concreting, £421,988; fish and vegetable markets, £98,800; "private improvement" expenses, £12,628. All these make a total of £984,096.

For another great sanitary improvement—namely, the main drainage of the city—a loan of £350,000 has been sanctioned, and is being expended. Lastly, if we add the cost of the improved supply of water to the city—namely, £720,000—we have a grand total of £2,054,096 expended on purposes all of which tend to improve the health and comfort of the citizens.

When the main drainage and sewage precipitation scheme is completed—probably in about two years more—the Liffey will no longer be polluted, and the sewage, now impounded for many hours daily, will flow uninterruptedly through the sewers.

I hardly venture to claim that the large sum of money expended in sanitary works in Dublin, and the exertions of the sanitary department of the Corporation, have been the chief means by which the reductions in the death-rate have been effected. I have, however, no doubt that if the sanitary staff still consisted of only one individual and part of another, there would be much more fever in Dublin than there has been for some years past.

In the five years 1876–1880 the death-rate was 29·5; in the period 1881–1885, 27·4; in the next five years, 26·8; in 1891–1895, 26·1; and in 1896–1897, 26·3. In 1897 the death-rate was raised by epidemics of measles, whooping-cough, and scarlet fever. In the 10 years ended in 1885 the mean zymotic death-rate was 4·1; in the following 10 years it fell to 2·62, or 44 per cent. In 1896 the rate was 2·4, but in 1897 it rose to 4·5 in consequence of an epidemic of measles, and slight epidemics of whooping-cough and scarlet fever. Notwithstanding these epidemics, and one of small-pox in 1894–1895, the zymotic death-rate for the five years ended in 1897 was slightly below that of the English towns. The figures are as follows—33 largest towns, 2·84; London, 2·82; Dublin, 2·80. In the first half of the present year the rate was 1·7 in Dublin.

I have given these figures in proof that Dublin is not the hotbed of fevers which even some of its own citizens believe it to be. The visitors at this Congress may rest assured that they are not more exposed to contagion than they would be in London or Manchester.

PECULIARITIES OF THE DUBLIN DEATH-RATE.

If we considered only the zymotic death-rate and the infant mortality of Dublin, the sanitary condition of the city would appear to be as satisfactory as that of the English towns, and even as that of London. Many sanitarians regard the infant death-rate to be as a measure of the salubrity of a district almost equal to that afforded by its fever mortality. In the following table I give the death-rate of infants under one year of age in the 10 years ended in 1897 in Dublin, London, and the 33 large English towns:—

Deaths of Children under One Year of Age in the 5 years ended in 1897.

—	Rate per 1,000 of the Estimated Population under One Year of age	Rate per 1,000 of the Registered Births	Proportion per 1,000 of the Total Deaths	Rate per 1,000 of the Total Population
England and Wales	152·6	152·2	254·8	4·58
33 largest English Towns	174·6	171·8	272·0	5·36
London	158·2	159·6	252·4	4·82
Dublin	171·0	169·8	166·4	3·92

In all Ireland the deaths of children under one year of age are, as a mean, about 99 per 1,000 registered births.

These figures prove that no larger proportion of the infants born in Dublin perish in the first year of their existence than is the case in the 33 largest English and Welsh towns. The small percentage of total deaths, which are those of infants, as compared with the English towns indicates a very high rate of mortality amongst those of greater age. Whilst the infantile mortality is less in Dublin than it is in the 33 largest English and Welsh towns, it is practically the same as that of the 67 smaller towns (with an aggregate population of 3,812,631)—namely, 169. In some of these towns the infantile death-rate was very high—in Wolverhampton it was 217; in Salford, 219; in Ashton-under-Lyne, 228; in Langton, 252; and in Preston, 262.

The high infantile mortality is chiefly due to neglect and the physical evils arising out of poverty. Amongst the well-to-do classes about 6 per cent. of the deaths are those of children under five years of age, whilst out of every 100 deaths of persons belonging to the labouring classes 40 are those of children under five years of age.

The children of the poor suffer from the insufficiency and improper nature of their food. They are not adequately protected from cold in winter. It is melancholy to see tender boys and girls out in the streets in the depth of winter shoeless, and with only the most scanty garments. Young persons offer less resistance to the influence of cold and wet than adults; yet, even sometimes amongst the rich, we see the naked legs and arms of young children exposed to a temperature which would make their parents shiver if they were not well protected by warm clothing.

The Society for the Prevention of Cruelty to Children and the Police-Aided Society for Providing Clothing for Poor Children are associations which deserve the warmest sympathy and generous support of the humane public. They have done great good, and could do much more if they were adequately supported.

Deserving, too, of a great tribute of praise are the kind people who provide a day's "outing" in the country for the children of the slums, and those, too, who secure for the pale seamstress and the tired shop or factory girl a few days in the country. The change may be all too brief, but it at least more than realises the earnest wish of the poor toiler expressed in one of Hood's most pathetic poems:—

> "Oh, but to breathe the breath
>   Of the cowslip and primrose sweet,
> With the sky above my head,
>   And the grass beneath my feet,
>   For one short hour."

WHY IS THERE A HIGH RATE OF MORTALITY IN THE ADULT POPULATION OF DUBLIN?

Amongst the poorer classes there is in every town a higher death-rate than prevails amongst the affluent classes. I have long been of opinion that as compared with London especially, and with many other towns, there is a larger proportion of the poorest classes in Dublin. It is admitted that Ireland is a very much poorer country than either England or Scotland. It is highly probable that this comparison holds good for town as well as country. If that be the case we may, to some extent, account for the high mortality from non-infective diseases in Dublin, as compared with the English towns, from the circumstances of the larger number of poor people in the former. Dublin and London cannot be fairly compared, for, as Dr. G. V. Poore truly remarks,* "London is very largely a city of wealthy and well-to-do people, most of whom must be looked upon as sojourners rather than dwellers in the city. Amongst such as these, who command every luxury and necessary in life, including change of air, death-rates ought to be low." Mr. Sergeant, in a paper published in the *Journal of the London Statistical Society* for June, 1864, advances the opinion that in comparing the death-rates of London and Birmingham an allowance of 1·5 per 1,000 should be made in favour of the latter, on account of the comparatively small proportion of the affluent classes which inhabit it.

To our distinguished Registrar-General, Dr. Grimshaw, is due the merit of being the first to publish the rates of mortality amongst the different classes of the Dublin community. When similar information is given in the reports of the English and Scotch Registrars-General we shall then be in a position to form some estimate of the relative proportions of the poorer classes in Dublin as compared with London, Edinburgh, and other cities.

HOUSING OF THE VERY POOR.

The improvement in the viability of the working classes which has taken place within the last 30 years is to some extent due to the better dwellings provided for them. Owing to the benevolence of the late Mr. Peabody, Lord Iveagh, and other philanthropists, a considerable number of healthful dwellings have been built for artisans and labourers. A still larger number have been erected by companies, some of which have been founded on semi-philanthropic, semi-commercial lines. In this city and its suburbs the Dublin Artisans' Dwellings Company own dwellings occupied by 2,194 families, who pay from 1s. 9d. to 12s. per week. This Company is now constructing 188 additional dwellings.

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* "London Ancient and Modern. From the Sanitary and Medical Point of View." By G. V. Poore, M.D., F.R.C.P.

The City and Suburban Artisans' Dwellings Company have provided dwellings for 284 families, who pay from 2s. 6d. to 6s. per week; the Industrial Tenement Company own a block of buildings in which there are 46 separate tenements, let at from 2s. to 4s. per week. Many employers of labour, such as railway companies, brewers, distillers, &c., have erected improved dwellings for their employés.

Fourteen years ago I suggested to the Corporation the desirability of putting in force the provisions of the Housing of the Working Classes Acts. The suggestion was acted upon, and at the present time the Corporation have provided 375 separate dwellings, let at the following rents—25 from 6s. 6d. to 10s. (with shops), 12 from 4s. 9d. to 5s. 6d., 84 at 4s. 6d., 98 from 3s. 6d. to 4s., 98 from 2s. 6d. to 3s. 3d., 47 at 2s., 14 at 1s. 9d., and 23 at 1s. 6d.

Although so much has been done in providing improved dwellings for the working classes the vast majority of them are still lodged in wretched tenements. A few years ago I had a kind of census taken of the city, and found that 32,000 families were located in about 7,000 houses, affording 1½ rooms per family. On the other hand, the remaining 22,000 families of the city occupied 17,000 houses.

Whilst much has been accomplished in the way of providing proper dwellings for artisans and the better class of unskilled workers, practically nothing has been done to improve the miserable state of the homes of the very poor. In every large town there are, exclusive of beggars, thieves and vagrants, &c., many honest people whose precarious earnings barely suffice to keep body and soul together. Amongst this class are to be found small dealers, pedlars, hawkers, charwomen, rag-pickers, night-watchmen, the inferior class of seamstresses, porters, and labourers, the miserable creatures carrying placards termed "sandwich-men," and men and women engaged in many other poorly remunerative employments. Beside these there are the dull-witted and the physically feeble people, who are only capable of earning the merest pittance.

It is in the wretched homes of these poorest of the poor that the seeds of fever are developed as in a hotbed. Their dwellings are a peril to the whole community, for their inmates carry contagious matter into the streets, shops, factories, and other places. The effluvia from them taint the atmosphere, in the purity of which all are interested. It is the dwellings of the very poor that demand nearly all the attention of the sanitary inspector. He finds it almost an impossibility to get their owners—who are often nearly as poor as their tenants—to keep them in even moderately good condition.

Since 1879 more than 3,000 houses have been de-tenanted and closed in Dublin on account of their insanitary condition; of these not one-half have been rebuilt or rendered fit for human occupation. The closing of insanitary houses and the clearing of unhealthy areas, have, however, been of little benefit to the poorest of the poor. The people who lived on the unhealthy areas have not returned to occupy the neat dwellings which replaced their wretched tenements. The rents of the new dwellings were beyond their means. The unhealthy areas have been cleared, but the condition of the people who dwelt on them has remained unchanged. They have sought on other areas low-rented tenements as insanitary as those from which they had been ejected.

If all the lowest-rented and consequently least sanitary of the Dublin tenement houses were compulsorily closed, where, save in the workhouse, could their inmates obtain shelter?

I feel convinced that the ordinary landlords of tenement houses, the majority of whom are leaseholders only or yearly tenants, cannot provide proper dwellings at from 1s. to 2s. per week, the rent which the very poor can only afford. Dwellings so low-rented can be provided only by the municipality, or by philanthropic societies, and individuals. They will pay very little if any interest on the money expended on their erection and maintenance, but every unhealthy dwelling which they replace will be a distinct gain to the whole community. The replacement of unhealthy by healthy habitations means less illness, longer duration of life, and diminished pauperism.

It may be said that if you give a dwelling to a man at less than its market value you pauperise him. To this it may be rejoined that children are not pauperised by receiving their education free; the students in the state-endowed colleges and universities are not pauperised by acquiring not merely a general education but money-making professions chiefly at the cost of the tax-payers. We already give the poor medical advice and medicine gratis; let us go a step further and provide the most dependent of them with dwellings in which they can live under reasonably healthy conditions.

An attempt is now being made to raise a sum of money sufficient to erect a block of tenements, which it is proposed to let at from 1s. 6d. to 2s. per week. It is to be hoped that generous support will be given to those who are engaged in this meritorious project.

THE MUNICIPAL AUTHORITIES SHOULD BE ENCOURAGED TO PROVIDE WORKPEOPLE'S DWELLINGS.

The borrowing powers of municipal authorities are limited to a sum equivalent to two years' valuation of the town for rateable purposes. Thus, if a town were valued at a million of pounds its governing body would be empowered to borrow two millions. When this restriction was placed upon civic authorities the money borrowed by them was expended nearly if not altogether on what might be termed unproductive works, such as the paving, sewering, and lighting of the thoroughfares, &c. It seems to me to be unreasonable that the money expended by urban authorities in providing artisans' dwellings, baths and wash-houses, abattoirs and markets, from which revenues are derived, should be included in the amount authorised to be borrowed. Mortgages on these buildings as well as the security of the rates is required by the Treasury for loans granted in connection with them. It is evident that as the loans for the erection of artisans' dwellings are to be placed in the same category as loans for sewers and other non-revenue producing works, the power of municipal authorities to provide dwellings for the working classes must be extremely limited. It is to be hoped that this disability will soon be removed.

The market value of the artisans' dwellings in the possession of the sanitary authorities should be ascertained and the sum found added to the amount allowed to be borrowed on the two years' rateable valuation system. Thus, if a corporation could borrow a million for unproductive purposes and that it possessed artisans' dwellings valued at £100,000, then their borrowing powers should be extended to £1,000,000.

RACKRENT IN RELATION TO PRIVATE IMPROVEMENT EXPENSES.

In the abatement of nuisances, involving structural alterations in a dwelling, the expense has frequently to be defrayed by persons having little or no interest in the benefits derived from the structural alterations. In order to prevent this injustice, as it may be termed, an amendment of the Public Health Acts of both England and Ireland is necessary. The cost of private sanitary improvements, insisted on by the sanitary authority, is borne by the person who receives the rackrent of the premises. The definition of rackrent in the English Public Health Act of 1875 is not so simple as that of the Irish Act, which defines it to be two-thirds of the rateable valuation of the premises. Thus if a landlord lets a house for £60 a year which is valued at £40 he receives a rackrent, and must pay for the cost of sanitary improvements, although he may have let the premises on lease for 999 years. In such a case as this surely it is the leaseholder who ought to pay for the improvements, as he alone enjoys them.

A curious point in connection with private improvement expenses is the liability of the person who receives rent from the occupier for the cost of the improvements, although he himself may pay a rackrent. He is termed the "immediate" rackrenter. I know of a case where a person who paid £80 a year for a house valued at £75 was obliged to sublet it for £60 in consequence of depreciation of house property in the street. Although losing £20 a year by the house he was obliged to pay nearly £60 in providing it with improved drainage and sanitary arrangements, whilst the landlord, who received £80, was by law exempt from contributing to the expense of the improvements. It seems only fair that every person having a beneficiary interest, present, proximate, or remote, in a house, should be obliged to contribute to the expense of its improved sanitation, the proportion to be determined by the magistrate who makes the order for carrying out the improvement.

THE WATER-CARRIAGE OF FILTH.

When, in 1879, the Department of Public Health was placed under my direction, I commenced to wage a determined war against the system of storing filth in pits, which had prevailed in Dublin for centuries, exclusively in the poorer quarters of the city, and partially in the other districts. To this storage of filth must be ascribed the polluted condition of the soil, which still has not yet been got rid of. It was no easy task to induce or compel the owners of houses to adopt the water-carriage system of filth removal, but the task has practically been accomplished. Unfortunately the occupants of the tenement houses too often do not take proper care of the improved sanitary conveniences supplied for their use, and the landlords complain that they are constantly called upon to repair injuries to the sanitary arrangements, due to the action or carelessness of their tenants. The Public Health Act provides that in the case of two or more houses having sanitary accommodation in common the tenants can be collectively proceeded against for the abuse of the sanitary arrangements. The law should be made to apply to single houses inhabited by two or more families. In this connection I would like to express my strong opinion that every separate dwelling should be supplied with sanitary arrangements for its exclusive use. Those which are used in common by several families will never be kept in proper order. I may mention that in the Corporation Artisans' Dwellings, Bow-lane, every tenement—and there are 24 let at only 2s. a week—has its own scullery and sanitary arrangements.

There are many persons, including medical men, who believe that the general introduction of the water-carriage system of filth removal has not been a benefit to Dublin, but the reverse. They are under the impression that fever has increased since the old system of filth storage has been superseded. The statistics which I have brought before this Congress conclusively disprove the statement that fever has increased in Dublin; it has, on the contrary, decreased. In every town in the United Kingdom in which the water-carriage system has been adopted the public health has been improved.

Dr. Scurfield, Medical Officer of Health for Sunderland, shows, in a report presented to the Corporation of that town in 1897, that in 33 towns in which the water-carriage system of filth riddance prevails the deaths from enteric fever averaged 15 per 100,000 of the population; while in 33 towns in which the conservancy method remained, the rate was 26 per 100,000. In the former the deaths from diarrhœa were in the ratio of 52 per 100,000, whilst in the latter the rate was 108. The deaths from all causes were 2·6 per 1,000 more in the conservancy, than in the water-carriage, towns.

In Nottingham during the period 1887–1896 there was 1 case of enteric fever in every 558 houses from which filth was removed by the agency of water; whilst in every 37 houses having middens there was 1 case of this fever.

At the International Hygienic Congress, held in Madrid this year, the following resolution was adopted:—"That the general health of the population is improved and the spread of the disease prevented in towns and dwellings by the immediate removal of all foul matters and by a copious supply of pure water."

PREVALENCE OF TYPHOID FEVER IN DUBLIN.

The mortality caused by typhoid fever is greater in Dublin than in nearly every other town in the United

Kingdom. In Ireland, Belfast alone has a higher death-rate from this disease. On the other hand, diphtheria is very much less fatal in Dublin than in the English towns. I have come to the conclusion that both diseases have, to a great extent, a telluric origin; they seem to be in some way intimately connected with the soil. If, then, we take both and regard them as semi-malarial, Dublin will not occupy a worse position than the English towns. The deaths from enteric fever and diphtheria combined were in 1887–1896 in the ratio of 55 per 100,000 persons living in Dublin, and 60 per 100,000 in London. In 1897 the rate was 54 in Dublin and 64 in London. In 1896 the mean diphtheria rate alone was 50 per 100,000 in London, Wales, Essex, Kent, and Worcestershire; in Dublin diphtheria and enteric fever combined caused 44 deaths per 100,000 inhabitants.

Dublin has a supply of water of great purity; its street sewers can compare favourably with those of other towns; and the plumbers' work in its houses is as good as it is in the great majority of towns. Why, then, should there be so much enteric fever in Dublin? I have long been of opinion that the micro-organisms of this disease have an abiding place in its soils, which for so long a period were polluted by leakage from the filth receptacles and defective sewers of former times. I believe that, under certain conditions, to which I have often referred in papers and reports, these malignant organisms escape from the soil into the atmosphere, from which they pass through various media into the bodies of human beings.

That there is a connection between enteric fever and the soil is shown by the results of observations of the distribution of more than 4,000 cases of the disease in Dublin. Where gravel forms the site of streets, there is far more typhoid fever than in districts which rest upon the stiff boulder clay. This is clearly owing to the fact that the *Bacillus typhosus*, which is aërobian—that is, requires oxygen—can get it more freely in the loose gravels than in the stiff clays. In the gravel, too, there is a much greater space for the development and movement of the bacilli. It has long been assumed that the soil of Dublin lying nearest to the river was always water-logged, and it was suggested that the drainage of this soil and its sub-soil might lessen the prevalence of enteric fever. A few years ago I caused a number of wells to be sunk in the ground near the river, and at the higher parts of the city. Long-continued observations of the height of the ground, or sub-soil water in those wells proved that, in the higher, the water came to within 4 or 5 feet of the surface of the ground, whilst near the river the water remained at from 12 to 18 feet from the surface. It seems strange that the surface of that part of the city from 50 to 70 feet above the level of the river, at high water, should be only 4 or 5 feet above that continuous sheet of subterranean water termed sub-soil or ground water, whilst the low-lying districts have from 12 to 18 feet of dry soil. The explanation is, after all, a simple one. The low-lying districts rest on gravel, which permits the rain to sink into it very deeply, whilst the high grounds are stiff clays which retain the water.

When a soil becomes infected by the *materies morbi* of typhoid fever it is difficult to eradicate it. The recent experiments of Dr. Sidney Martin, recorded in the supplement to the Annual Report of the English Local Government for 1896–7, show that typhoid bacilli put into soil multiply in it, and ramify throughout it; at the expiration of 105 days they were quite lively. These experiments, and the investigations of other scientists, especially of Dr. Porter of Stockport, clearly prove that typhoid bacilli can live and multiply in soils containing organic matter. I feel satisfied that they are to be found in the soils of Dublin and other places. Now that the pollution of the soil in Dublin has almost ceased, we may expect that the *pabulum* of the typhoid organism will gradually be used up, with consequent diminution of the amount of enteric fever.

OUR DAYS BETTER THAN THE OLD TIMES.

The belief that former ages were happier than the one we live in does not rest upon a foundation of fact. The "brave days of old" of the poet were too often days of pestilence and famine, of war and rapine, of might over right, of coarseness of language, of absence of public opinion as a censor of morals, of sanguinary criminal laws. During many centuries Europe was periodically devastated by pestilences. In the fourteenth century the terrible "black death" carried off twenty-five millions of its inhabitants. Population stagnated: that of England remained stationary for three centuries, not so much owing to war as to pestilence and famine. In 1664-5 the plague almost depopulated London.

In that long and gloomy period, so truly named the "dark ages," the towns were the hotbeds of disease, from which their poisonous seeds were spread throughout the land. Their denizens were crowded into ill-ventilated houses in narrow, sunless streets. Their water supplies were polluted by the oozings from cesspools, which were almost as numerous as the houses themselves. There were no main sewers, no systematic removal of filth, no municipal sanitary organisations. Even so late as the last century, Howard, the philanthropist, drew terrible pictures of the insanitary state of the prisons, and even of many of the hospitals and orphanages. The wretched condition of the floating homes of sailors, even those of the Royal Navy, is graphically described in the humorous but truthful pages of Smollett.

The present time is better than the old time. Leprosy and malarial fevers have vanished from these countries. Typhus fever, which once filled the wards of the Dublin Fever Hospitals with patients, is now rarely met with. Fifty years ago people disfigured by small-pox might be seen in every street; now that loathsome disease is disappearing under the influence of vaccination and improved hygienic conditions of towns and people. In this connection I must express my satisfaction that vaccination is still compulsory in Ireland, although no longer so in England. I believe that the medical profession are practically unanimous in regretting that the Vaccination Act, just passed, permits in England and Wales the so-called "conscientious objector" to refuse to have his child vaccinated. In Ireland, if vaccination is sometimes neglected, it is not from want of belief in its efficacy, or from contempt of the law—indeed the complete absence of agitation in Ireland against compulsory vaccination is a proof of that respect for law and order so characteristic of the Irish people.

SANITARY EFFORTS SHOULD NOT BE RELAXED.

Although a great improvement has taken place in the state of public health in these countries and most parts of Europe, a further improvement is required and is attainable. So long as two or three out of every thousand of the population perish annually from diseases which are termed "preventable," so long must the efforts of the sanitary reformers and professors of Preventive Medicine be continued. Phthisis, which is as fatal as the "preventable diseases," ought now to be included amongst the latter, for its nature shows that it, too, might be eradicated.

We require, perhaps, some additions to and amendments of our sanitary laws, but what is most required is the thorough enforcement of the laws such as they are—and they confer great powers upon the sanitary authorities. The notification of infective diseases and the laws relating to disinfection should be strictly enforced. The proper isolation of fever patients should be provided for. The speedy and complete removal of filth from houses and towns should be secured. Healthy dwellings and cheap baths and wash-houses for the most dependent classes of the community should be multiplied. The "unhealthy occupations" should be rendered innocuous, or, at least, less unhealthy. The injurious emanations from certain kinds of works should be prevented or reduced to a minimum. These are only some of the measures required in order to assimilate our towns as nearly as possible to that ideal City of Hygeia which Richardson has described.

The efforts of a sanitary authority to improve the state of public health cannot attain to a full measure of success unless supported by public opinion and private practice. One of the objects of such Associations as the Royal Institute of Public Health and the Dublin Sanitary Association is to educate the general public on the important subjects of public and domestic sanitation. Just in proportion as the citizen is convinced that his health and longevity are favourably affected by the operation of the sanitary laws, will he respect and observe them, even at personal inconvenience and some expense. Let us hope that the Sanitary Congress, which this day commence their deliberations in this ancient City of Dublin, will be able to prove that it is in the power of its citizens to make it one of the healthiest cities in the world.

Art XI.—*Pulmonary Phthisis.*[*] By T. Percy C. Kirkpatrick, M.D.

The subject of tuberculosis in all its forms has been treated of so fully, the disease is so common in all civilised countries, and so well known to everyone, that there appears no longer necessity or indeed room for discussion on it. Unless a paper has some original remarks to make, or some new discoveries to relate, it is not likely to attract much attention from medical men. They are prone to pass it by with the remark—"It is only tuberculosis; we know all about that." It is not the intention of this paper to treat of the clinical history, symptoms, or pathology of phthisis, but rather to try if a general review of our knowledge of these will afford some practical rules which should regulate our conduct in the treatment of it. In spite of the advance our knowledge has made in recent years, and the clearness and distinctness with which the pathology of phthisis has been made out, our methods of treatment have remained practically at a standstill. The changes necessary in our treatment as a result of increased knowledge of pathology are fully recognised in theory by all, yet it would appear that the older methods still cling to our minds in practice. The newer methods have not yet been recognised with that clearness and distinctness which are essential for any useful attempts at their inculcation.

The reason of this, no doubt, is that each individual case of the disease is taken by itself and treated as such, and our increased knowledge of pathology has advanced us but little here; it has afforded us no means by which we may cure an advanced case of phthisis better than our predecessors did twenty years ago. What it has done is to show how we may limit the spread of the disease as a whole, to prove that phthisis belongs to the category of preventable infectious diseases, and indicate the means we must employ if we wish to limit its ravages.

The growth of the tubercle bacillus in the tissues of our bodies is now known to be an essential and constant factor in the causation of tuberculosis in all its forms, and it has been proved beyond the possibility of controversy. that this bacillus always gains access to our bodies from without. Every case of tuberculosis is consequently due to an infection directly or indirectly from some pre-existing case. Appeals to "heredity" or "diathesis" are no longer admissible as causal explanations; the disease must be definitely placed along with those recognised as specific, infective, and consequently preventable.

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[*] A paper read before the Dublin University Biological Association, on the 3rd of March, 1898.

The hereditary theory in explanation of phthisis has been disproved by numerous statistics, both of new-born infants and cattle, and it is not supported in any way by our knowledge of the pathology of the disease. The assumption of a strumous diathesis which ran on into tuberculosis was a vague generalisation made at a time when our knowledge was very meagre, and one which now serves no useful purpose, tending as it does to render our ideas confused and to hamper our treatment.

The persistence of such phrases in speaking of the causation of tuberculosis is in a large measure responsible for the backward state of our treatment of it at the present day. One would have expected that the precautions adopted to limit the spread of other infective diseases would have been applied to this, and with all the more strictness too in proporiion to its commonness and fatal results. It has been estimated on good grounds that the death-rate in these countries from tuberculosis alone exceeds that of all the other so-called zymotic diseases taken together.

That such, however, is not done, or at least is so only in a very small and inadequate degree, will be readily admitted by everyone who has given any attention to the matter.

The only explanation which can be offered of this state of affairs is that the true nature of the malady has not yet been brought home with sufficient force to the minds either of the medical profession or of the general public. The difficulty of dealing with the question would perhaps account for imperfect methods, but can hardly be said to explain their utter absence. It is then with the view of trying to alter this state of affairs that I bring this matter forward, and it is I believe a matter peculiarly appropriate to a society like this, composed, as it is, chiefly of medical students. It is on those who are new students that the duty will fall of dealing with this matter in the future, and it is only through a true and full conception of the nature of this duty that we can hope for success. Sir Thomas Watson in his admirable lectures on the Practice of Physic, says:—"There are many diseases also over which medicine has very little control, but the causes of which, when ascertained, may be avoided or extinguished. Such causes when they do not happen to be removable by individual efforts are often susceptible of extinction by the united measures of a community; and for this reason it is very desirable that correct opinions respecting the causes of disease should be widely diffused among the public; and there is no way in which information of this kind is so likely to be made generally known as by communicating it to medical students who are about to scatter themselves in all directions over the face of the land."

This profound truth is as applicable to-day as it was fifty years ago when uttered by Sir Thomas Watson, and has rather gained than lost in its significance with the increased power which scientific discoveries have placed at our disposal. I propose in this paper to deal with that aspect of the question known as pulmonary tuberculosis or phthisis, which is probably the most common form of the disease, and that in which the danger of infection is greatest.

The life-history of the tubercle bacillus is now known with a considerable degree of accuracy; pure cultures of it have been grown outside the body, and the characteristics of these growths, the media they prefer, and the conditions which favour them are all well known. The chemical reactions of the bacillus are characteristic, and render its recognition and differentiation from others easy. A great deal of labour has been spent in investigating its behaviour in regard to the various antiseptics, and the effect that these have on its growth. It has been proved that the tubercle bacillus grows with difficulty in artificial media, and in a succession of such cultures soon loses its virulence, but that this can be readily restored from time to time by passing the culture through a living animal. The bacillus is readily killed by the application of strong antiseptics, by boiling, and very soon loses its virulence if exposed to bright sunlight; it resists drying, however, even at fairly high temperatures. The action of sunlight is most important, for there can be no doubt that this is nature's method of disinfection, and it is most efficacious.

It is now generally believed that phthisis is, as a rule, developed in consequence of the inhalation of the tubercle bacillus in a virulent state into the air passages during the act of respiration. There is necessary, no doubt, a state of susceptibility of the recipient in order that the disease may result, but what that state is we do not know, and whether it is possessed by any individual can only be recognised by their not taking the disease when exposed to infection. No one can say *à priori* in any individual case that exposure to infection will not be followed by the development of phthisis. It is well known that sputum of infected patients contains millions of virulent tubercle bacilli, which are coughed up from the lungs, and distributed broadcast wherever the sputum is deposited. There are two well-recognised ways by which these bacilli may gain access to the atmosphere, and so, being inspired by healthy persons, excite in them foci of disease. As long as the sputum remains moist and in large masses it is practically safe as far as atmospheric infection goes, but as soon as the sputum dries it may be carried about in small particles as atmospheric dust, which particles containing virulent bacilli are capable of giving rise to infection. It has been shown over and over again that the dust in rooms inhabited by phthisical patients contains virulent bacilli, and there can, I think, be little doubt that aerial infection by means of this dust is possible, and does in many cases occur. But there is another and probably much more potent way in which aerial infection takes place. When a person coughs violently, and with open mouth, as is so often the case in the phthisical, minute droplets of finely-divided moist sputum are driven out into the surrounding atmosphere. These droplets are so small that they are readily suspended in the air and carried about by weak atmospheric currents. In this way tubercle bacilli in a moist state are distributed through the atmosphere of the room, settle on the various articles of furniture, clothing, food, &c., contained in the room, and may be inhaled by any person who breathes the tainted atmosphere. That phthisis may be caused in this way has been shown by Flügge in his experiments on animals, and he lays stress on the fact that it is probably much more dangerous than dry dust infection. Whatever be the exact mode of infection is a matter of less importance than the recognition that infection does take place, and that the sputum of phthisical patients is to be looked on as a most dangerous material. Since this mode of infection is generally recognised by medical men, and the danger is denied seriously by none, one must feel the greatest astonishment at how little practical use is made of this knowledge. We constantly see in the general wards of our hospitals phthisical patients in beds a few feet perhaps away from others containing those suffering from other lung troubles. These patients are coughing violently, soiling their bedclothes and handkerchiefs with their sputum, and yet we regret the huge annual mortality from phthisis. We see young and delicate children allowed to associate freely with their brothers or sisters suffering from phthisis, to sleep in the same room or even in the same bed with them, and then we lament the hereditary tendency to tuberculosis. Such a state of affairs would be hardly credible were it not a patent fact of which we all have evidence.

It is easier to point out the glaring abnormality of such a state of things than to suggest a remedy for it, and it must be admitted that the difficulties in the way of adequate treatment of phthisis are enormous. There is one thing of which we may rest assured—namely, that nothing effectual can be accomplished except as Sir Thomas Watson says—"By the united measures of the community." Such measures will be possible only when the public are in a position, through their knowledge of the facts, to co-operate with the physicians, and it is, I believe, the solemn duty of every physician to further this knowledge by every means in his power. Having once recognised the necessity for action, the next question for the physician is what that action shall be. It is with a view of suggesting outlines to be filled in by individual efforts, rather than any dogmatic theory, that the following remarks are made. I shall first deal with the question of the individual practitioner brought to the individual case of phthisis, for this I take it, is how in after life it will be first presented to us. Our mode of dealing with this question will of necessity vary more or less according to the circumstances of the case, but our duty is to set up a standard course of action and aim at always as far as possible adhering to it.

When first brought to a case in which the diagnosis of phthisis is made with certainty the physician should point out to the patient, if an adult, to the mother or those in charge, if a child, the infectious nature of the case and the danger those associating with the patient run of contracting the disease. The mode of infection should be strongly and clearly dwelt upon, and the necessity for recognising the sputum as a highly dangerous material urged as fully as possible. The habit of expectorating on the floor, into the handkerchief, or soiling the bedclothes should be most strongly condemned. Expectoration should always take place into a spitting cup or vessel containing some fluid not necessarily antiseptic, and the sputum should be destroyed at frequent intervals by burning. The use of small pieces of cotton, wool or old rags which can be immediately burned, or kept in water till burned, should be advised instead of handkerchiefs.

Isolation as complete as practicable should be recommended, and the use of a bed-room for the patient alone, or at least in every case a separate bed, should be insisted on. The patient should be instructed to hold before the mouth when coughing some wool or one of the substitutes used for handkerchiefs. The patient should be very careful never to cough into the face of any other person, and attendants should be warned of the danger of this. Children suffering from phthisis should not be permitted to attend schools with healthy children; this should be prohibited quite as strictly as it is in the case of scarlatina. In the case of workingmen, the question of isolation is more difficult, for deprivation from work in such cases often means starvation or the workhouse; but the danger of infecting their fellow-workers should be pointed out in the case of persons employed in offices, &c. As complete ventilation of dwelling-rooms as possible should be carried out, and frequent disinfection is advisable. The value of boiling and of fresh air as disinfecting agents must never be lost sight of.

When we have availed ourselves of every means at our disposal, even then they may be inadequate, but this is no reason why we should not do as much as we can. The foregoing remarks do not claim to be a complete system for prevention of phthisis, my endeavour, as I said before, being to point out the broad lines on which we should proceed, and to indicate in a general way some standard of action such as every practising physician should possess. Unless one possesses such a standard, and makes use of it as a routine practice in every case the duty which he owes to his patient will, I fear, be only inadequately performed and that, too, with much greater difficulty to himself.

I do not wish to make any extravagant claim for the results likely to accrue from such a procedure—much more is necessary to effectively oppose the ravages of phthisis, the combined measures of the community can alone be successful—but I do claim, and I hold it a most important point, that the systematic adoption of such a procedure will materially conduce to that state of public opinion which is a necessary pre-condition of any combined measures. Any general application of preventive measures against phthisis will involve a considerable outlay of public money, as well as no small restriction of the liberty of the subject, and such conditions will be tolerated only when the majority of the people have come to recognise them as necessary for their own welfare.

I have said that the preventive treatment of phthisis in private is difficult, but the difficulty is as nothing compared with what I may call the public treatment. The question of compulsory notification, so often advocated, is here far from simple. The disease is so chronic in its course, so insidious in its onset, that often one case may pass through the hands of many practitioners in many places before it even approaches its final stage; while others may never come under the notice of the doctor till the very end. The former cases will be notified many times and in many places, the later will never be notified at all until it is too late for notification to be much use. That the rigorous adoption, however, of public notification is not impossible, but can be of the very greatest benefit, few will deny who read the admirable address of Dr. Herman Biggs to the British Medical Association in Montreal last year. What has been done in New York can surely be done in this country were the people at all aware of its necessity. The practical details of such a scheme will require much care and thought for their elaboration, but everyone can contribute to their success. Among the more well-to-do classes the danger can be to a large extent limited by individual instruction, and in our large centres, at all events, the poorer classes, depending as they do on our hospitals and public dispensaries for their medical care, are largely in our power. Through a combination of the various hospital and dispensary staffs a very complete notification and localisation of the poorer phthisical patients could be effected without putting any undue burthen on anyone, and it would be thus possible for the sanitary authorities to deal with these cases as might be considered most suitable. The people could in this way be instructed in the dangers of the disease, and the methods by which its spread may be prevented, and facilities be afforded for disinfection of houses, clothes, &c. I do not say the task would be easy, or that it would be possible without a large staff of sanitary officials, but I do say that its importance demands that some efforts should be made to cope with it.

I would suggest that in the treatment of this question we should begin in a tentative way. The sanitary authorities, in all our larger towns at all events, should be granted powers to enable them to treat the disease in the same manner as any of the specific infectious diseases. Dispensary doctors and hospital physicians should be invited to notify every case that comes under their charge, giving particulars which will render identification as easy as possible. Leaflets should be widely distributed, pointing out the nature of the disease and the best means of preventing its spread. Hospital authorities should be prohibited treating cases of pulmonary phthisis in general wards, and endeavours made to induce them to open special wards for such cases. Houses and rooms which had been inhabited by persons suffering from the disease should be thoroughly disinfected before being again occupied, and every facility should be offered for thorough sterilisation of bedding, furniture, and clothes which had been exposed to infection. Spitting about the floors of public conveyances and halls should be prohibited by law, and public spittoons established wherever it might be thought desirable. Children suffering from tuberculosis even in the earliest stages should be excluded from ordinary National Schools, and every practicable means adopted with a view of isolating them from other healthy children.

I believe the adoption of such methods would not involve any extraordinary outlay of public money, and would not impose any unbearable restrictions on the individual, while I feel convinced that their utility would soon be apparent. Every year the application would become easier and more effectual, and we could look forward in the near future to imposing some tangible barrier to the encroachments of this terrible disease. The establishment of special hospitals for the treatment of consumption would be very desirable, and would, I am convinced, follow in due course. At present it would be impossible to provide adequate hospital accommodation for all the poor suffering from the disease, nor would the establishment of such places under the present condition of things give any hope of practical permanent benefit.

It is urged that such measures where useful are too Utopian in nature, and where applicable are not desirable. The exceeding chronicity of phthisis it is said takes it out of the class of the ordinary zymotic diseases, and renders the preventive measures applicable to them inapplicable here. How, it will be asked, can isolation be applied to a disease which may last for years, and which affects so many individuals? What will become of children if they are excluded from schools for years, and deprived of education because they are attacked by phthisis? How can early diagnosis be made with sufficient certainty to permit of such restriction being enforced? Criticism and an examination of the difficulties of any procedure are always useful when once it has been decided to adopt that procedure, but if the adoption of the procedure is necessary, criticism should succeed, and not precede, its adoption. Too often do we see useful plans relegated to oblivion, merely by the statement of the difficulties involved in them. That something must be done in the near future to check the ravages of tuberculosis is, I think, obvious, and our energies should be directed towards the solution of the difficulties in the way rather than towards increasing them.

Absolute isolation in the case of phthisis is of course impossible at present, but much may be done; and we must remember that, by excluding such children from schools, we are not only acting in the interests of the schools, &c., we are not only acting in the interests of the community at large, and protecting the healthy, but also affording the best possible treatment to the patients themselves. The early diagnosis of phthisis can now be made with as great, if not greater, certainty than in the cases of other disease, and the establishment of public laboratories under the control of the sanitary authorities, where the suspected sputum in the case of dispensary patients could be examined free of charge, would obviate any difficulty on the score of excessive work on the dispensary doctors. If the dispensaries are to afford medical aid to the poor, and proper treatment can be based only on accurate diagnosis, surely it is not too much to ask that where such diagnosis is possible every effort should be made to arrive at it.

I have said nothing regarding the question of infection by food supply, not because I consider it unimportant, but because I feel convinced that adequate measures for protection from this source of danger cannot be long delayed, and because I am convinced that the danger from personal infection is much greater and much less clearly recognised.

Let us as physicians make up our minds as to the reality of the danger and the necessity of meeting it. Let us recognise that we, who know the danger and the curse the disease is to humanity, have a duty to perform in meeting it, and our course of action will be made plain to us, while our strength and power to carry out this action will grow with use.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Les Sérothérapies, Leçons de Thérapeutique et Matière Médicale professées à la Faculté de Médecine de l'Université de Paris. Par L. LANDOUZY, Médecin de l'Hôpital Laënnec, Membre de l'Académie de Médecine et de la Société de Biologie. Paris: Carré & Naud, Éditeurs. 1898.

THIS beautifully printed and substantially bound volume exemplifies some of the best characteristics of the Parisian School of Medicine. M. Landouzy possesses to a high degree that limpid purity and clearness of style, that faculty for symmetrical and logical exposition which are, to a greater or less extent, found in all didactic works hailing from *Outre-Mer.*

The French mind is indeed intolerant not merely of obscurity in any shape or form, but—and this is, perhaps, its weak point—of those qualifications with which general assertions as to biological matters have almost invariably to be accompanied. The capacity for accepting the statement, interwoven with its various conditions and limitations, at one and the same intellectual mouthful, if one may so speak, has to be possessed in a high degree by the reader of German scientific works; the French reader, on the other hand, requires his bolus of limitations to be divided up into a number of small sugar-coated pills, whilst the Englishman occupies in this respect an intermediate position—disliking the clumsiness of the page-long Teutonic sentence, and distrusting the mathematical symmetry of French exposition. These reflections have been suggested by a perusal of M. Landouzy's lectures on sero-therapeusis, following closely, as it did in the case of the present writer, on that of a German work of somewhat similar scope. It must at once be stated, however, in bare justice to M. Landouzy, that, whilst possessing all the literary virtues of his countrymen to a high degree, he has succeeded almost completely in avoiding their abuse. Of course one has to pardon his dash of patriotism and "Pasteurolatry"—if one may coin a new word with an old die from the theological lumber-room. Thus, "cela nous est un devoir de proclamer que la plus grande conquête qu'aient jamais enregistrées les sciences médicales est œuvre française, puisqu'il était réservé au génie experimental de Pasteur de créer la médecine et la thérapeutique *pathogéniques*, comme, il y a dix-huit cents ans, il avait été donné au génie d'observation d'Hippocrate de codifier, en une forme intangible la médecine des symptômes et des signes. C'est ce qui me faisait dire naguère, à cette même place, qu'il suffirait à l'impartiale Histoire; pour marquer les vraiment fécondes et décisives époques de la médecine, de proclamer que ces époques—nous les dénommerons: époques symptomatique, diagnostique ou hippocratique; pathogénique ou pastorienne—appartiennent aux temps hippocratiques et au siècle de Pasteur."

Passing over the trifling inaccuracy of 400 years in the date of Hippocrates as a mere slip of the pen—What will posterity think?—What would Pasteur himself have thought of the statement that he created pathogenic medicine and therapeutics?

The scope of M. Landouzy's lectures can best be judged of by consulting the *résumé* he gives of each. The first is devoted to general considerations about the new *materia medica*, consisting of artificially weakened (attenuated) viruses, immunising, vaccinating and curative serums; also of animal juices and secretions, such as Brown-Seqúard's testicular fluid, the employment of thyroid secretion in myxœdema and obesity, of pancreatic juice in diabetes, of renal tissue in certain forms of nephritis, of nervous tissue in neurasthenia, and, finally—here even M. Landouzy puts in a note of exclamation—of cardiac tissue, which has been ordered (in Germany, he says) in certain cases of cardiac incompetence. For such medication M. Landouzy coins a new name—*opothérapie* (from ὄπος, juice). The second lecture, after defining sero-therapeusis and enumerating its several varieties, passes on to the consideration of the preventive sero-therapeusis of tetanus. The author lays stress upon the complete failure of tetanus antitoxin as a curative agent in cases of acute tetanus, points out the similar incapacity of anti-rabic inoculation to effect a cure when once the symptoms of hydrophobia have begun to develop, explains the cause of this, and precises the limits within which sero-therapeutics can be relied upon in cases of tetanus. It is solely preventive. Surgeons are recommended, as a routine practice in all cases of wounds that have been contaminated with earth, or been inflicted with agricultural or other instruments liable to such contamination, to freely excise and anti-septicise the wounds, removing of course any inflammatory secretions, and to inject the antitoxic serum as a preventive measure. Some interesting statistics are given of the results of this treatment as applied to horses and lambs.

The fourth and fifth lectures are devoted to anti-venomous sero-therapeusis. Here, in addition to the work of the French observers, Calmette and Phisalix, that of the Scottish experimentalist Fraser meets with adequate recognition.

Sero-therapy, as directed against streptococcal infection, forms the subject of the next six lectures, and their perusal may be confidently recommended as they are brimful of valuable information which has not yet found its way into the text-books. M. Landouzy is quite convinced that excellent results have been obtained in erysipelas, puerperal and post-operative septicæmia, streptococcal anginas and broncho-pneumonias, from this line of treatment. He emphasises the importance of establishing the bacterioscopic diagnosis, and quotes many interesting and well-observed cases, the temperature-curves of which he adduces in support of his views.

The next three lectures are devoted to the sero-therapy of diphtheria, which in accordance with the great importance of the subject is treated with much fulness of detail. Here we find, *inter alia*, an interesting discussion of the fatal results ascribed to the injection of Behring's serum, in a few cases, including the celebrated one of Prof. Langerhaus's child, which died a few minutes after a small dose injected as a mere preventive measure, the little patient having been exposed to the danger of infection. Somewhat of a surprise is afforded by the next two chapters, which deal at length with intubation and tracheotomy, and one cannot help asking how these procedures can find a place in a work devoted to sero-therapeutics. There is much of value in the remaining lectures which deal with the sero-therapy of anthrax, typhoid, cholera, plague, syphilis, tuberculosis, the intravenous injection (transfusion) of large quantities of artificial serum, and the diagnostic value of tuberculin and malleïn. It would, however, be impossible within the limits of this review to touch upon the many points of interest with which M. Landouzy's brilliantly written exposition simply bristles. We have said enough to show that the work is of genuine value, both scientific and practical, and can unhesitatingly recommend it for perusal to every physician who desires to keep abreast of the most recent developments in the art of therapeutics.

The Mental Affections of Children: Idiocy, Imbecility, and Insanity. By WILLIAM W. IRELAND, M.D. London: J. & A. Churchill. 1898. 8vo. Pp. 442.

THIS book is virtually a new edition of the author's former work on Idiocy and Imbecility. Dr. Ireland is to be congratulated on having not merely enlarged that work, but also brought it quite up to modern requirements, so that it now forms one of the best books extant on these subjects, and far the best in English.

"Idiots are a much more numerous class than is generally thought. In many countries they are more numerous than the insane, and in all as numerous as the deaf and blind put together. This can be proved by what statistics we have, and there is a strong presumption that on this point the statistics fall short of the truth."

Dealing with ætiology, Dr. Ireland says—"Idiocy is of all mental derangements the most easily propagated by descent." He does not attribute much weight to consanguine marriages, quoting Sanson—"La consanguinité élève l'hérédité à sa plus haute puissance."

The influence of drunkenness has probably been exaggerated. In places where drunkenness has decreased idiocy has not diminished. The favourite fancy of some authors, that idiocy is connected with intoxication of a parent at the moment of conception, does not seem to be borne out by facts. "In Scotland many of the lower classes get drunk at the New Year time—whole villages at once. We might then expect a larger proportion of idiot children to be born about the beginning of October, or nine months after the men come back from the herring fishing, when they generally have a carouse. This no one has noticed." At the same time Dr. Ireland draws attention to the beautiful experiments of Ch. Féré on the result of the injection of alcohol into the albumen of eggs hatching in an incubator. "This distinguished neurologist . . . found that the same agents, at the same doses, have different effects at earlier and later periods of incubation. When applied early, they had a tendency to retard development and to produce monstrosities; applied at later periods, they, instead of abnormal forms, were followed by a much larger number of deaths of the embryo. The liability to a greater mortality begins with the first appearance of a nervous system. . . . Dr. Féré remarks that at whatever time the toxic agent is applied, one often sees embryos which resist and continue to take a normal development." Under emotional conditions in the mother our author considers the influence of illegitimacy. He thinks that the statistics showing greater prevalence of idiocy among the illegitimate are fallacious, and inclines to the belief that idiocy is scarcer among natural than among legitimate children. The old popular fancy that illegitimate children are finer physically and mentally than those born in wedlock[a] seems to have found modern supporters among men of science. Voisin is quoted to this effect, as is Burdach on the authority of Roth. More certain is another sexual relation—"The number of male idiots is everywhere greater than that of female ones in the proportion of about two to one."

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[a] As old at least as Edmund in *King Lear*:—

"Why brand they us
With base? With baseness? bastardy? Base, base?
Who in the lusty stealth of nature, take
More composition, and fierce quality,
Than doth, within a dull, stale, tired bed
Go to the creating a whole tribe of fops
Got 'tween asleep and wake?"

—*King Lear* I., 2.

Though he labours with great openness of mind and with very extensive learning to keep himself abreast of the times, Dr. Ireland will not be led away by the vagaries of the criminal anthropologist. We have been told, he says, "that in the habitual criminals in the slums of our large cities we see the reversion of the free savages who once roamed in the forests of Germany and Britain. Lombroso finds features common to both in the scanty hair, the light bodily weight, the small cranial capacity, the retreating forehead, the early syntoses of the sutures, the large temporal sinuses, the great development of the under jaw, the inequality of the orbits, the unclean skin, the large deformed ears, the closer resemblance between the sexes, the comparative insensibility to pain, the callousness of disposition, the courage combined with cowardice, or idleness, boasting, and superstition, the fondness of metaphor, and the taste for tatooing."

"But many of these traits are not characteristic of savages: the scanty beard may be found in the Mongolian, but certainly not in the ancient Germans or Caledonians. Some savage races have large and well-formed crania. . . . If amongst barbarous tribes some correspondence of the weak-minded or the born delinquent had come into being, they would have perished in infancy, or sunk in the efforts to gain food, or perished in the feuds of warring savages. If the creature had progressed from apehood into an animal like the burglar or pickpocket, he would never have progressed any further. The habitual malefactor who fills our jails is a degraded product of our complex civilisation. It is our social system, with the sacredness which it attaches to human life, that brings forth, sustains and protects the existence of those creatures, who belong to a pathological type, not to a physiological one."

We must say that it seems to us that our old friend, Dr. Ireland, whose writings have given us pleasure before the era of criminal anthropology, is not only much more philosophical, but more truly scientific in his way of regarding this question than is the leader of the criminal anthropologists. We do not dwell on the inaccuracies of Lombroso; on his habit of assuming an enormous major which contains not only his minor but a hundred others to which he is not prepared to subscribe; on his "reasons," which resemble the honest Fluellen's "salmon in both;" but it appears to us always that he shows a quite fundamental incapacity for distinguishing accidents from essentials. He supposes minute and trivial traits to be transmitted, while it is evident that if there be any question at all of transmission it is in something underlying the mere casual and accidental circumstance to which he points. Who can believe that the tendency to tatoo the body, and especially the penis, has been transmitted to the criminal from his savage ancestor in the same sense in which the sexual passion or the instinct of self defence has been transmitted? Is it not evident that not the practice of tatooing[a] has been transmitted, but the idleness, the vacancy of mind, the want of higher interests? Does the schoolboy adorn the walls of the privy with indelicate tracery because his ancestor, the page of Montaigne's days, did, as we are told, the same thing? or because the cave man in his scratchings rarely failed to indicate most forcibly the sexual points of the creatures he depicted? Let us admit that we are descended from ancestors who wore no clothes and did not know the use of money. Every Darwinian will admit so much. Then it follows when we see a poor devil out at the elbows that this is a case of reversion to the ancestral type? or, if it does not follow, we can only say we have read our Lombroso in vain. But the real thing which is transmitted from generation to generation of the sane—the thing in which the savage is the equal of him who is in the foremost files of time, the very essence of life and of progress, the one trait which heredity pre-supposes, the one trait which renders heredity possible—is the power of adaptation of the organism to its environment, and this is the one trait which is not present in the idiot or imbecile, and cannot, demonstrably cannot, have been derived from any ancestor. The tendency to failure of adaptation cannot be properly said to be a hereditary tendency, is not indeed a transmissible tendency, but must depend upon something else.

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[a] By the way, did the ancient Germans or Kelts tatoo themselves? Did the car borne heroes of Ossian's day boast the motley of the Sandwich Islands? or did Arminius face the Romans decorated with the florid volutes of the Marqucsan?

So it seems to us that even where we have more tangible qualities than mere mental tendencies the appeal to atavism may be very misleading. To be sure that atavism exists in the case, say, of a human brain which resembles that of a lower animal, we must be confident that that animal, or at least a very near ancestral congener, stood in the direct line of ascent from man. Otherwise it appears more philosophical to conclude that the development of the organ was arrested at a stage when it had not yet assumed, or had imperfectly assumed definite human characteristics, and that it then developed along abnormal lines, producing a final condition in which the resemblance to the brain of a lower animal is merely accidental, or is determined by the particular stage at which the first arrest of development occurs; rather than to assume that the brain of man has passed through phases of which we have no further evidence than this atavism itself.

Two facts are to be remembered in connection with atavism. One is that atavism was originally started as an explanation of the circumstances of certain traits skipping a generation and re-appearing in the grand-children: if the term is extended to mean a casting back to the traits of any one ancestor, no matter how remote it would seem to contradict the teaching of heredity altogether. Another is that as we can only understand atavism in the race to mean the casting back to some common characteristics, we need scarcely expect it ever to produce forms resembling those of other races, for the latter have probably never stood in the direct line of ascent, but are merely to be regarded as collateral even if very near relations.

Dr. Ireland adopts his old classification of Idiocy into:— 1. Genetous. 2. Microcephalic. 3. Hydrocephalic. 4. Eclampsic. 5. Epileptic. 6. Paralytic. 7. Traumatic. 8. Inflammatory. 9. Sclerotic. 10. Syphilitic. 11. Cretinism. 12. Idiocy of Deprivation. He admits that this division is neither exhaustive nor scientific, the classes being of different values, but he defends it on grounds of convenience, and of being as accurate as present knowledge will permit.

Under the head of Genetous Idiocy, the author discusses the interesting question of palatal condition in idiocy. He does not think that excessive vaulting of the palate can be accounted for by arrest of development of the sphenoid bone.

Among varieties of the genetous form, he describes the so-called Mongolian type, with its curious correlation of Mongoloid features, rough papillated tongue and dwarfish figures. "These Mongolians are to be seen in all asylums in Europe and North America in the proportion of about 3 or 4 per cent. to the other idiots." Now, this is a condition which is manifestly not atavistic, and yet must be due to some special change in fœtal development. Ireland compares the curious correlation of conditions with Darwin's deaf cats with blue irides, and the Russian and Burmese hairy men with only two or three teeth. Elsewhere he points out that Morel has noted dissimilarity of members of the same family as a sign of degeneration, and that Féré has found the same occurrence in his broods of chickens from eggs subjected to injection or to mechanical injuries. "This dissimilarity of certain types from the parents while they resemble one another, is often well marked in idiocy; for example, Mongolian idiots are like one another, while unlike their parents or brothers and sisters."

In considering microcephalic idiocy, Dr. Ireland again declares against atavism. "Vogt," he tells us, "believes microcephaly to be a case of atavism, the appearance of a type of brain inherited from some very remote ancestral ape." The notion has an appearance of plausibility, especially to those who do not know what idiocy is, but the question is far less simple than this solution would suggest. "The intelligence of a monkey is very different from that of an idiot. You cannot reach the simian intellect by deducting so much from the human. It is different in time as well as in degree. One might as well expect to find the same character of intelligence in an infant of two months old and in a chimpanzee, because the cranial contents were about the same. The mental powers which the monkey possesses are in perfect accord with his organism [are adapted to his wants and to his environments] . . . . On the contrary, microcephalic idiots, though in general more lively than those of other classes, . . . are as destitute of animal instincts as they are of human intelligence. They have no power either of feeling or protecting themselves from danger, and if left to themselves would soon perish. They present the effaced lineaments of a human being, which only a wandering fancy will mistake for those of an ape." Fancy, indeed, seems to reign supreme in this region as in so many psychiatric fields. More careful is the statement of Professor Cunningham, in what Dr. Ireland rightly calls "the most important monograph on microcephaly in the English language,"[*] who, after drawing attention to resemblances in the brain of a microcephalic idiot to brains both of higher and lower apes, and to the brain of the Polar bear, says, "we cannot shut our eyes to the possibility that in the brain of F. we may have a tolerably faithful reproduction of the gyri and sulci which at one time were characteristic of an early stem-form of man." Yet, even so, the form is probably not pure, because by one of those correlations to which our author has drawn attention, that arrest of development or return to primitive type which has struck the great anatomist, is accompanied by certain anomalies (one of which is the appearance amidst many lower traits of some distinctively human) and by certain merely morbid conditions. These latter, and not arrested developments in a primeval stage, are the cause of the idiocy. This is obvious, because if we had to deal only with uncomplicated reversion to an earlier type, we would have the appearance, not of an idiot, but of a sane, clean, active, vigorous, cunning, and powerfully instinctive animal, such as the stem-form of the human race must have been. On the whole it must be said that though the brains of idiots may afford to the anatomist as learned and thoughtful as Professor Cunningham many valuable hints as to earlier stages of development of the nervous centres, any atavistic theory of the microcephalic brain does not satisfy the requirements of the physician who has to account for clinical facts. As for the fancies of the criminal anthropologists, who see in moral imbeciles and criminals a reversion to the savage type of mind, we are hardly sure whether we are to take them seriously or not, but as there are still extant many savage races it may be quite confidently said that the latter do not resemble either imbeciles or our civilised criminals.

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[*] "The Brain of the Microcephalic Idiot." D. J. Cunningham and T. Telford Smith. Dublin, 1895.

Dr. Ireland's divisions of paralytic inflammatory and traumatic idiocy overlap a good deal. The description of the first of these includes a good account of porencephaly, an affection which has received heretofore singularly little attention in English books. Some good descriptions are to be found in early numbers of this Journal from the pen of Professor R. W. Smith, under the name of agenesia of the brain.

Dr. Ireland gives a good account of cretinism and cretinoid idiocy. The treatment by thyroid extract is discussed—"It has been a disappointment to my warm hopes that under the thyroid treatment the mental improvement has not kept pace with the bodily growth, though almost all the patients have shown a quickening in intelligence, and a greater readiness to re-act to impressions."

The chapter on idiocy by deprivation contains, among other things, accounts of Laura Bridgman, Meystre, and Kaspar Hauser.

Interesting chapters follow on the Growth and Mortality of Idiots, and on Insanity in Children and Insane Idiots. An excellent chapter analyses the Sensory and Mental Deficiences of Idiots, and the two penultimate chapters deal with the Education of Idiots and Imbeciles, and the Laws for Idiots and Imbeciles.

"The following passage in the Koran may refer either to insane persons or imbeciles, or to both:—'Give not unto those who are weak of understanding the substance which God hath appointed you to preserve for them; but maintain them thereout, and clothe them and speak kindly to them.'" It almost turns a critic Mussulman to note the inspiration with which the Prophet foresaw dishonesty, neglect, and cruelty as the dangerous tendencies in those whom God has appointed to preserve the interests of the class whom He has so deeply afflicted.

In a pungent sentence Dr. Ireland lets us see a little of the difficulties that embitter the lives of those who have to try and manage public charities—"I have found the difficulty of directing the education of imbecile children nothing to the task of educating directors. The children at any rate never pretended to understand what they had never studied, nor tried to throw the blame of their own blunders upon those who had given them timely warning." No, because at the bottom of these troubles lie the cowardly dread and the brutal hatred of the infirm-minded, which are some of the least amiable traits of the sane mind. It is interesting to note that though the spread of civilisation has forced these feelings into comparative obscurity in their direct bearings on the insane, it has not yet caused it to be discovered that it is wrong to entertain such feelings with regard to those who have charge of the custody or education of the unsound in mind. Nevertheless, the sentiment in the latter case is clearly the mere obverse of that in the former, and both rest upon the same degrading instinct which leads the strong to hate and injure the weak.

Our author's account of the "Provisions for Idiots in Ireland" is worth quoting entire. They may be said to form the high-water mark of criminal negligence:—

> "These were, as Mr. Jonathan Pim wrote in 1864, simply that they may be confined in lunatic asylums as being insane, or in prisons as criminals, or in workhouses as paupers. No change has taken place since, except the establishment of the Stewart Asylum, in which there are at present about sixty inmates. There is a statute permitting the erection of provincial asylums for imbeciles which might have been utilised, but nobody has thought worth while to set the machinery in operation.
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> "The condition is thus described in the Fortieth Report of

the Inspectors of Lunatics in Ireland, 1891: 'The existing lunacy laws were not made for imbeciles, and we find in Ireland no less than 418 of this unhappy class occupying in district asylums accommodation properly intended for different forms of insanity, mimicking the shameless indecencies which are brought before their eyes, their moral degradation completing their mental deficiency, while no less than 1,888 are scattered over the workhouses, where the provision made for them is often inadequate, where their very presence exercises a painful and demoralising influence on the other inmates, and where in some cases they live in mechanical restraint to prevent their mischievous and destructive habits. The great majority, however, remain as hopeless wanderers, exposed to want and suffering; residing in homes where they can only in rare instances obtain the treatment suitable to their condition, while they are often grossly neglected.'

"The Local Government (Ireland) Bill will effect a great change in the administration of lunacy in Ireland, and it is to be hoped that it will contain some provision for the better treatment of idiots and imbeciles when it passes into law."

But the Local Government Act, as our readers know, does not contain any provision giving parliamentary or municipal franchise to idiots and imbeciles, so they will hardly benefit by it, and there seems to be no arrangement by which any human statute can provide a conscience for those whom Mohammed, with gentle irony, says, "God hath appointed to preserve" the poor idiots. Perhaps the teachings of a milder faith than Mohammedanism may eventually penetrate far enough to produce compassion for this class in some kindly hearts, but nobody in the Island of Saints is demented enough to suppose that any reform in such a matter will ever come from politicians.

This book contains some further interesting hints at personal reminiscence. The author mentions an idiot "who was nearly shot as a spy when we were marching down to Delhi before the siege." What a long vista of noble service to the empire and to the race this casual remark opens up. Wounded and invalided from the Indian Mutiny, Dr. Ireland devoted the residue of his life to the cause of the idiot and imbecile, and has been privileged to do much for the advancement of knowledge in his department through his constant industry and his ardent spirit of progress.

It was no doubt this Indian experience which gave him an interest in the myths about wolf children, to which he devotes the last chapter of the volume before us. Since the earlier edition of his book this subject has been familiarised to all of us through Mr. Rudyard Kipling's jungle books. Dr. Ireland, as might be expected, throws cold water on these venerable traditions. Oddly enough he does not point out one fact which negatives the possibility of the tale of Romulus and Remus, and all such stories—namely, that the human animal requires to be cared and fed to an age long past the time when any of the carnivora continue to attend to their offspring.

Ringworm, in the Light of Recent Research. By MALCOLM MORRIS. London: Cassell & Co. 1898.

UNTIL quite lately our knowledge of the pathology of ringworm was practically limited to the facts that it was contagious, and that it was due to a parasitic fungus, of the genus tricophyton. But, thanks to the labours of various observers, notably M. Sabouraud, of Paris, our views upon this subject have been materially enlarged, and the problem has assumed a more complex aspect.

The main point made out is, that the unicist doctrine is dead, and the plurality of ringworm fungi is no longer a theory, but an established and accepted fact. While much still remains under discussion, all competent observers are agreed that there are *at least* two distinct species of fungi which produce the disease in different cases. One of these is a small-spored fungus—microsporon Audouini—which attacks chiefly the scalp, and almost exclusively occurs among children. Another is a large-spored fungus, which attacks the body (tinea circinata), the beard region (tinea sycosis), the nails (onychomycosis), and, occasionally, the scalp. There seems to be no limit of age in the case of body-ringworm.

Mr. Malcolm Morris has now given the profession a most excellent, concise, and readable account of ringworm, viewed from the modern standpoint; and we heartily commend his book to the attention of every practitioner.

The work is beautifully illustrated with an elegant and faithfully coloured plate, showing the characters and distribution of the fungus (stained) in the hair; and with twenty-two admirable micro-photographs executed by Mr. Andrew Pringle.

The local treatment is fully discussed, and, notwithstanding its drawbacks, Mr. Morris assigns the first place to chrysarobin, carefully applied—ten grains and upwards to an ounce.

The Royal University of Ireland. Examination Papers, 1897. A Supplement to the University Calendar for the year 1898. Dublin: Ponsonby & Weldrick. 1898. 8vo. Pp. 731.

This useful volume has been brought out in their usual excellent style by Messrs. Ponsonby & Weldrick, of the University Press. We are glad to observe that the papers set are given in full, so that the student has not the trouble of referring to his various authors in ancient and modern languages when using the examination papers of the past year as an exercise.

The book should be in the hands of every student of the Royal University, and will also, no doubt, be largely used in the higher forms of both public and private schools to test the capabilities of the pupils who are about to enter the University.

De la Fonction du Nouvel Urètre (Urètre Hypogastrique) chez les Prostatiques anciennement Cystostomisés. Par le Dr. Xavier Delore, Ex-Interne des Hôpitaux de Lyon; Ancien aide d'Anatomie à la Faculté. Lyon: Alexander Rey. 1897.

Dr. Xavier Delore's book is a royal 8vo volume of close on 200 pages, in which he devotes himself to the consideration of the formation of an anterior artificial urethra for the treatment of the ills that follow on senile enlargement of the prostate gland.

The Lyons School of Medicine has from the earliest days of modern surgery given more than ordinary attention to the genito-urinary system, and all the methods of treatment introduced for the relief of vesical trouble have been freely criticised. We need do no more than recall the just condemnation passed on the barbarous, unscientific and harmful suggestion of Sir Benjamin Brodie, for the treatment of enlarged prostate by what was euphemistically called canalisation. The pronouncement was made when Sir Benjamin Brodie was considered an authority, and as President of the Royal Society was looked on as the high priest of science. And although the operation was killed by the fatal bleeding that followed from its performance by Barnsby Cooper, nevertheless the Lyons Medical School deserves the credit of declaring against the unsurgical procedure.

In later years Guyon, Poncet, Icaid, Cazeneuve have worthily upheld the reputation of Lyons as a great surgical centre; and it is pleasant to find a young practitioner like Dr. Delore taking up the *rôle* of an investigator in this difficult branch of surgery. The subject may be said to have come naturally to a pupil and admirer of M. Poncet, whose surgery of the genito-urinary tract is known outside France, his writings having been translated into the principal European languages. We dwell on these facts, for we confess to a bias in favour of French medical writing, and we read with a keen pleasure of every advance in surgery made by our French brethren; nevertheless, we are jealous of the reputation of British surgery, and of the advance of medicine by English-speaking surgeons. Our French brethren display a proper spirit of jealousy in trying to secure to French scientists all that is due to them for their original work, and we commend them for it. But we regret to find that occasionally they assume credit for discoveries they did not make, and for original work which is not theirs. We cannot accept a claim for originality which is based on an ignorance of the past. We regret to say that this is the task Dr. Delore has set himself to do; not to claim the credit of introducing the operation of an artificial anterior urethra for himself, but to support the claim of his master, M. Poncet.

The advantages possessed by the operation are told with great clearness, and are in no particular exaggerated. The readers get the results, favourable and unfavourable, of thirty-four cases, from which we find that fourteen patients had perfect control of the artificial urethra, seven had partial control, and thirteen had no control—an eminently satisfactory result. The writer also draws attention to the fact that in about three years time the artificial urethra has a tendency to become obliterated; in such a case occurring under our own care we found that the obliteration of the artificial urethra synchronised with the wasting of the prostate, and that for the past few years the patient passes his water in full stream by the natural passage, no sign of prostatic trouble being present.

Having described the anatomy of the bladder and its surroundings, the steps of the operation, and soforth, the author gives thirty-four illustrative cases, and winds up with an excellent summary.

To all he has said in favour of the operation we give our warm approval, and we feel thankful to the author for placing his experience of its great value before his professional brethren. Our objection however, is a very grave one. It is that the author ascribes the operation to M. Poncet, of Lyons, whose description of the operation, and whose first case was not published (*L'Union Médicale*) until three years after Dr. H. M'Guire, of Virginia, had published his cases and his description of the operation in the "Transactions of the American Surgical Association" for 1888. The operation is also described by Dr. H. M'Guire in the "International Encyclopædia of Surgery," Volume VII.

Dr. H. M'Guire's claims to the honour of introducing the operation were also stated in the Continental papers. Twelve months have scarcely passed since it was shown in the Madrid paper, *El Siglo Medico* that M. Poncet's claims to be considered the discoverer of the operation were not based on good grounds.

The excellent monograph before us adds nothing to what Dr. H. M'Guire has told his medical brethren. It gives Dr.

Delore's experience of the operation, which is favourable; but as we read the volume we are more than surprised that the name of the gentleman who introduced the operation, who carried it to a successful issue, who described the operation in the transactions of a great surgical association, and in a standard work on surgery, should never once be named. We hope that our surgical brethren of Lyons are not unwilling to acknowledge the just claims of the great Virginian surgeon, Hunter M'Guire.

GEORGE FOY.

Les Actualités médicales. La Grippe. Par L. GALLIARD, Médecin de l'Hôpital Saint-Antoine. Paris: J. B. Baillière et Fils. 1898. 16mo. Pp. 100.

THIS volume is the first of a new series—"Les Actualités médicales." In addition to classical works, didactic treatises which cannot record all new facts such as bacteriological discoveries, modes of treatment, and so on, there is room for a series of monographs intended to set forth new ideas. These monographs supplement treatises on medicine, general pathology, bacteriology, therapeutics, and surgery.

In these little volumes, of portable size, moderate cost, and tastefully illustrated, the medical public will find a *résumé* of all the questions of the hour, as they will be thoroughly up to date.

The series begins propitiously with the volume which M. Galliard has written upon influenza, or as our French friends appropriately call the disease—*la grippe.*

Laying aside the didactic method, M. Galliard presents us with a history of influenza, at once bristling with references yet easy to read, all the new facts concerning this malady being of course referred to in its pages.

The headings of the various chapters are as follow:—An Epidemic; the Microbe; the Symptoms; the Clinical Types; the Complications; Treatment; Prophylaxis. We have glanced through the pages of this little book, and are much pleased with its style and contents.

In our judgment this series will be indispensable to those who aim at being always *au courant* with the progress of medical science. We may augur well of the series, when we observe that among the volumes in preparation the publishers announce—"Diabetes," by Lépine; "Diphtheria," by Barbier; "Curable Albuminurias," by Teissier; "Exophthalmic Goitre," by Jaboulay; and "Aseptic Suppurations," by Josué.

Annual Report on the Year 1897. By E. MERCK, Darmstadt. Published in March, 1898.

THIS report contains a conscientious and impartial description of new remedies, its object being to report on the composition, origin, and applicability of their new preparations, and to quote the respective publications bearing on them.

It consists of 175 pages, with a Bibliographical and General Index. The great value of its scope recommends it to all who are interested in the pursuit of medical practice.

A System of Medicine by many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.L.S., F.S.A.; Regius Professor of Physic in the University of Cambridge; Fellow of Gonville and Caius College. Vol. V. London: Macmillan & Co., Limited. 1898. Demy 8vo. Pp. 1058.

THE "System of Medicine," with which Dr. Allbutt's name is so closely and so honourably associated, grows apace. The fifth volume, consisting of upwards of one thousand pages, lies before us, and it contains allusions to a forthcoming sixth volume. It seems that the publication of the fifth volume was delayed through waiting for an article on "Thrombosis and Embolism," by Professor Welch, President of the Congress of American Physicians and Surgeons. Finally the editor had to go to press without this article, and the subject of Diseases of the Arteries has been postponed to the sixth volume.

The contents of the volume before us are—diseases of the respiratory organs, of the pleura, and of the circulatory system. Space will not permit us to analyse all the articles in detail, and we must content ourselves with a few critical remarks which suggested themselves as we glanced through the volume.

Dr. William Ewart, Physician to St. George's Hospital, writes on Bronchitis and Bronchiectasis. He gives three classifications of bronchitis—anatomical, clinical, and pathological. As regards the last he observes:—

> "A *pathological nomenclature* recognises a bronchitis pure and simple—not hitherto traceable, as in the diphtheritic, the tuberculous, and some other forms, to parasitic influences—which presents the following well-marked varieties:—
>
> "i. Catarrh bronchitis: (*a*) simple mucous catarrh; (*b*) chronic or muco-purulent catarrh.
> "ii. Plastic bronchitis.
> "iii. Putrid bronchitis.
>
> "The immense majority of cases belong to the catarrhal group. The putrid purulent form is seldom met with. The plastic variety is so rare as to be little more than a clinical curiosity" (page 5).

The last statement is of course quite true, but it needs a qualification to remind us that in the general catarrhal bronchitis, particularly of children, there is often a croupous or plastic exudation into the finer tubes, casts of which are not infrequently coughed or vomited up.

At page 21, when describing "Intercurrent Bronchitis," Dr. Ewart tells us that "in some of the continued fevers, but especially in typhoid fever, a varying degree of bronchitis is almost the rule; but its importance is rarely of the first order, and the same remark applies to cases of typhus fever." We venture to question the accuracy of these statements. It is in typhus, not in typhoid fever, that bronchitis is particularly common. Hence the names "catarrhal typhus" and "broncho-typhus." Any physician also who has seen much typhus knows full well that the part played by bronchitis in this disease is of the very first importance—

on its presence depend, as a rule, the issues of life and death.

In considering the question of treatment in bronchiectasis, Dr. Ewart describes with approval the method of intratracheal injection. "In the majority of cases," he says, "nothing but good happens." We are thoroughly in accord with him when he adds: "In tuberculous cases, however, there may be some misgiving as to the possible dissemination of the infection from the upper into the lower lobes. From personal observation I regard the use of the method in cases of phthisis with grave suspicion; and it has been my regret to witness, after its repeated use, the appearance of persistent râles, of bronchial engorgement, and of catarrh pneumonia at both bases in a case which ended fatally" (page 84).

In the *Lancet* and *British Medical Journal* for June 11, 1898, Dr. Ewart qualifies his misgivings as to the safety of this method of treatment in phthisis by a reference to Mr. Colin Campbell's paper on the subject in Vol. LXXVIII. of the *Transactions of the Royal Medical and Chirurgical Society* of London. In that paper Mr. Campbell sets forth the advantages of distilled glycerin used as a vehicle instead of oil, and he relates a series of uniformly favourable cases.

Dr. Pye-Smith contributes an able article on pneumonia, which he briefly defines as "a febrile disease, running a short course, with a special form of acute inflammation of one or both lungs." At first reading we felt inclined to ask ourselves, why not "a *specific* febrile disease?" But as we read on through the article we found, to our amazement and disappointment, that the author refuses to lend the *prestige* of his name to the doctrine of the essential or specific nature of pneumonia. "Are we," he asks, "like Laennec and his successors, to regard it as an acute inflammation of the lung, of which the pyrexia or other symptoms are only the effects? or are we, with most modern writers, to look on the local lesion as but one element in a specific infective fever? or is any alternative opinion open to us? The fact seems to be that in this case, as in so many others, the phenomena of disease cannot be fitted into current classifications" (pages 114 and 115).

Dr. Pye-Smith holds that pneumonia belongs to a class of acute inflammations, not suppurative and peculiar to each organ. According to him pneumonia may be compared with acute Bright's disease, acute atrophy of the liver, and acute myelitis. He strives hard to controvert the doctrine of the essentiality of the disease, and in doing so is carried too far. For example, he asserts that pneumonia "does not protect from future attacks, but rather disposes to them." Quite so, but so does erysipelas, about the specificity of which there can be no question. He forgets, too, that evidence is fast accumulating that the very diseases with which he classes pneumonia are themselves, one and all, specific. We cannot, in the light of modern research, and particularly of bacteriological investigation, subscribe to the doctrine that pneumonia is a non-specific disease, while we freely admit that all evidence—clinical, pathological, and bacteriological—point to the condition as the outcome of a multiple infection.

"Phthisis Pulmonalis" receives full justice at the hands of Dr. Percy Kidd, Physician to the Brompton Consumption Hospital. His article runs to 88 pages. We are at a loss to know why he adopted Dr. William Ogle's Tables as to the mortality of consumption, instead of the more recent Tables included in the Supplement to the Fifty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England, Part I. (1895). These have been prepared by Dr. Ogle's most able successor, Dr. John F. W. Tatham, and they bring the facts thoroughly up to date. Dr. Kidd has given an admirable account of that deadly disease which is said to be responsible for one-seventh of the total death-rate of the world.

Pneumonoconiosis is happily translated into English by the author, Dr. J. T. Arlidge, as "Dusty Lung Disease." Pulmonary aspergillosis, emphysema of the lungs, asthma and hay fever, and syphilitic disease of the lungs are the other affections described in the first part of the volume.

"Diseases of the Pleura" are introduced with a learned article by Dr. Samuel West on "Intrapleural Tension." "Pleurisy" is by Dr. Samuel Gee, with a section on its morbid anatomy by Dr. W. P. Herringham. Professor David W. Finlay is responsible for the admirably succinct account of pneumothorax, which brings the second part of the volume to a close.

Two-thirds of Volume V. are given up to Diseases of the Circulatory System, and yet the subject is announced to be completed in Volume VI. The topics dealt with at present include various diseases of the blood. There are also treatises on the general features of the blood, the methods of clinical examination of the blood, eardiac physics, and dropsy, the last article being by Dr. W. Howship Dickinson.

The writers on Heart Diseases are—Dr. Laurence Humphry ("Congenital Malformation of the Heart"); Dr. F. T. Roberts ("Diseases of the Pericardium"); Dr. Thomas Oliver ("Injuries by Electric Currents of High Pressure"); Professor Dreschfeld ("Endocarditis"); Sir R. Douglas Powell ("Diseases of the Myocardium"); Dr. Ernest Sansom ("Diseases of the Mitral Valve"); and last, not least, Professor Clifford Allbutt ("Functional Disorders of the Heart," "Mechanical Strain of the Heart," and "Disease of the Aortic Area of the Heart"). To the last article an important postscript is appended, in which the author retreats from the position he took up in the text when discussing the alleged retardation of the arterial pulse in aortic regurgitation. His recantation must have cost Professor Allbutt dear, but it is full and honourable: "It seems probable," he says, "that Sir William Broadbent and other authors are right after all in asserting that there may be cardio-radial delay in aortic regurgitation."

Dr. Allbutt's views on treatment are in the main thoroughly sound. As regards the administration of chloral in heart disease, however, his views have evidently undergone some modification, though he still halts between two opinions. He says: "I suppose that chloral is a dangerous remedy in heart diseases, especially in degenerate heart. Sir W. Broadbent proscribes it altogether; Dr. Balfour, on the other hand, speaks of the drug with appreciation." He adds his own experience: "To many old people with degenerate hearts I gave the drug year after year, and certainly with the greatest comfort." "I now use chloralamide, which, I am told, is safer than chloral, and certainly it acts well, though scarcely so well, perhaps, as the latter."

Dr. A. Ernest Sansom is, of course, thoroughly at home in his monograph on Diseases of the Mitral Valve.

Taking this fifth volume all round, it is undoubtedly one of the best and most interesting of the whole series, whether we regard the subject-matter or the standing and reputation of the several authors. The illustrations are numerous and artistic, and the printers have done their part with rare perfection.

Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Edited by ANDREW J. M'COSH, M.D.; WALTER B. JAMES, M.D. New York: Trow Directory Printing and Bookbinding Company. Volume III. January, 1898.

THE third volume of the Report of the Presbyterian Hospital of New York is, like its predecessors, beautifully and correctly printed on paper of peculiar excellence. The text comprises some eight and twenty articles. Some of these are exquisitely illustrated.

It would be idle to attempt to criticise in any detail the varied contents of the papers of this volume. There is a peculiarly interesting one (pp. 88-153) on "The Malarial Fevers of New York City;" we have read it with peculiar relish, and believe that we have derived more solid information therefrom than we have heretofore gathered from any single publication on this important, and in many ways vexatious, subject.

The Botanists' Vade-Mecum, being a Synopsis of the Divisions and Sub-divisions of the Vegetable Kingdom. Compiled by JOHN WISHART. Edinburgh: E. & S. Livingstone. 1898. Pp. 143.

THIS synopsis is meant for the use of students during botanical excursions, as it will enable them rapidly to "place" any specimens named to them, and to see at a glance the distinguishing characteristics of the group.

After a short description of the sub-kingdoms, they are taken up separately, and then the classes and their sub-divisions are shortly defined, and the names of the genera are given; in the Angiospermia the genera are defined. The most recent classification of Felicineæ and a tabular classification of the vegetable kingdom are given in appendices. The index consists of forty-seven pages, and is supplied with a cut alphabetical margin, so that any required name can be quickly turned up. As the vade-mecum measures but 3¼ × 5½ inches it is easily carried in the pocket.

Outlines of Rural Hygiene. By HARVEY B. BASHORE, M.D. With an Appendix on the Normal Distribution of Chlorine by PROF. HERBERT E. SMITH, Yale University. Illustrated. Philadelphia: The F. A. Davis Co. Pp. vi.–84.

THE author has in this handbook given useful advice on sanitation as applicable to rural districts in America. There are a number of useful illustrations, some of the class introduced by Dr. Pridgen Teale, and the practical aspect of the question is ever kept in view.

B. Bradshaw's Dictionary of Bathing Places, Climatic Health Resorts, Mineral Waters, Sea Baths, and Hydropathic Establishments. London: Kegan Paul, Trench, Trübner & Co., Ltd. 1898. Pp. 362.

THIS is a new edition of a well-known and well-liked book. As new editions appear there is a tendency to elaborate the descriptions of the better-known places, and views and plans of towns are introduced. This seems rather a mistake, as the use of such a dictionary is to give the chief points of the largest possible number of places, so that selection may be made; when selection is made a local guide-book with views and plans can easily be purchased. General plans, such as that of the Engadine, are also introduced, and these are very useful.

It is a pity that the table of explanations and translations of technical terms and phrases on pp. 357–362 is not omitted. Medical men do not need medical terms to be translated, and the public will not benefit by such definitions as these:—"*Apnœa*—Difficulty of breathing;" "*Bronchus*—Wind-pipe;" "*Empyema*—Internal collections of pus;" "*Pericarditis*—Inflammation of heart;" "*Pleurisy*—Inflammation of lining membrane of lungs;" "*Vaginal*—To do with female external organs of generation."

Dr. Mendini's Hygienic Guide to Rome. Translated from the Italian and edited, with an additional Chapter on Rome as a Health Resort, by JOHN J. EYRE, M.R.C.P. London: The Scientific Press, Ltd. 1897. Pp. 188 + iv.

DR. MENDINI starts with the assertion that Rome is the healthiest of the large Italian cities, and then deals exhaustively with site, drainage, water supply, climate, and so forth, pointing out why Rome should be healthy, and by statistics showing that such is the case. Medical men who attended the International Congress of 1894 will remember the extensive works that were being carried out to divert sewage from the Tiber, and the new broad thoroughfares which let air blow freely through the city.

Dr. Mendini's work is well written and well translated (perhaps the title is the most faulty part of the text), and it has the fascination that belongs to Rome, making us feel that we have something more than a hygienic guide when we read of main drainage works and the Cloaca Maxima being side by side, and of the water carried by the ancient aqueducts being used for flushing sewers.

Electro-Physiology. By W. BIEDERMANN. Translated by FRANCES A. WELBY. Vol. II. London: Macmillan & Co. 1898. Pp. 500.

IT is with extreme pleasure that we welcome the appearance of the second volume of the translation of this most important book. The admirably complete summary of our knowledge of the difficult subject of electro-physiology, the way in which all the scattered facts are brought into line, and the clearness of the few principles by which the whole is held together, together with the great mass of original observations, make the work of Professor Biedermann one of the most remarkable and valuable physiological treatises which have appeared for many years.

The first volume, which we noticed last year, dealt with the electro-physiology of muscle and of epithelium. The present volume treats of the electro-motive action in vegetable cells, the electro-physiology of nerve, the electrical fishes, and the electro-motive action in the eye.

The principles underlying the entire work are those of Hering, to whom the work is dedicated, and in which dedication the author gracefully says he is only giving back to his master what he formerly received from him. When we consider, however, the enormous mass of original work which is contained in these volumes, we must recognise that the repayment is made with a very high rate of interest.

The exclusive polar action of the electric current; the law of Hermann that each excited part is negative to parts which are less excited; the chemical nature of all the processes in excitable living matter; the preponderance of anabolic or assimilatory processes at the positive pole, and of katabolic or dissimilatory processes at the negative pole; and the persistence of action during the entire time of closure of the current, are the main ideas which run through the pages of this great work.

In the chapter on the electro-motive action in vegetable cells a full account is given of the classical researches of Professor Burdon Sanderson on Dionœa muscipula, which are acknowledged to be "by far the best contribution to the subject."

The chapter on electrical fishes the author modestly commends to the indulgence of his fellow-workers—"It could only be compiled from the work of others, as I have no first-hand experience to draw upon. Those who know its widely scattered literature must condone the defects of the present attempt, in view of the lack of other summary." We think it would be hard to desire a better summary than that which is here given. In the other sections of the book the original work of the author is continually before us.

As regards the translation, we notice a marked improvement as compared with that of the first volume—indeed, the translation of the second volume leaves little to desire. The difficulty and labour of translating such a work as this must have been very great, and all English-speaking physiologists owe a deep debt of gratitude to Miss Welby for making Professor Biedermann's volumes accessible to them in their own language. The translator has divided the chapters into sections and enlarged the index, and added additional bibliographical references, all of which add to the value of her work.

To all students of natural science these volumes will be full of interest, and to all such we most cordially recommend them.

Diseases of Women. By J. CLARENCE WEBSTER, M.D.; F.R.C.P. Ed.; Assistant Gynæcologist, Royal Victoria Hospital, Montreal. London: Young J. Pentland. Crown 8vo. Pp. 678.

THE work before us differs materially from the usual text-books we encounter. It is marked by conciseness, and for its size contains an extraordinary amount of information, which is not readily found even in larger books.

Neither is it overburdened with plates and coloured drawings, which for the most part serve no good purpose, and are rapidly bringing gynæcological works into contempt.

It is in the scientific part of his subject, in contradistinction to the art of gynæcology, that the author is at his best. Thus anatomical, physiological, and developmental considerations are dealt with in a manner which recalls to one's mind the best works turned out from the Edinburgh School. Theoretical speculations, too, have an attraction for him; and he seems never so much in his element as when affording his readers some plausible explanation to account for conditions of which we at present know nothing.

Very careful information is forthcoming in respect of micro-organisms which are found in the vagina in health and disease. Asepsis and antiseptics are duly dealt with, and a very full account of the general requirements of operative practice also appears. Abdominal and vaginal sections, taken as a whole, are dealt with in a separate section, which embraces many of their important complications, such as hæmorrhage, shock, and sepsis.

Minor therapeutic measures form another important section under this head. Pessaries and their uses, massage, and electricity are described.

When writing of the bimanual examination, the author appears to think that a distinction should be drawn between the position in which a woman is placed in private as compared to hospital practice, and for the former he advises the side position. For our part, we are convinced that the dorsal position affords infinitely enhanced opportunities for arriving at a correct diagnosis, and therefore fail to see why our private patients should be placed at a disadvantage as compared to those attending the public institutions. As to considerations of modesty, there is absolutely nothing to choose between these customs alone being in favour of the Sims' position. The physical gynæcological examination, with its many modifications, are fully described, and will be found invaluable to the practitioner who endeavours to arrive at a correct diagnosis.

The author gives a clear description of the operation known as "curetting," notes its dangers and difficulties, and shows how these may be avoided.

When dealing with backward uterine displacements, we are told that "sometimes" bimanual manipulation succeeds in the dorsal position, "the abdominal walls being thin and lax." On the other hand, when speaking of the sound, the author says that by it "the fundus uteri is readily carried to the front."

That the sound is not an instrument free from danger no one doubts, nor is it necessary to use it in five per cent. of backward displacements, provided the dorsal and not the side position be employed. Its great importance in practice is found alone amongst those employing what we hold to be a faulty posture.

When describing the large special operations, such as hysterectomy, Dr. Webster is by no means at his best, and for the most part these are written about in neither a full nor a particularly up-to-date manner.

Deciduoma malignum receives his very careful attention; and menstruation is dealt with in an appendix, to which twenty-five pages have been devoted—a number sufficient to summarise our present knowledge of a function which, after all, remains to us a mystery.

RECENT WORKS ON INFANTILE DISEASE.

1. *Guide to the Clinical Examination and Treatment of Sick Children.* By JOHN THOMSON, M.D., F.R.C.P. Ed.; Lecturer on Diseases of Children in the School of Medicine, Edinburgh, &c. Post 8vo. 52 Illustrations. Edinburgh: William Clay. 1898. Pp. 336.
2. *La Tuberculose Infantile.* Revue Bimestrielle. Numéro 3. 15 Juin, 1898. Publiée sous la direction du DR. LÉON DERECQ et DR. GEORGES PETIT.

1. AFTER a thorough perusal of this volume we can confidently recommend it as a most excellent manual for senior students or practitioners, as introductory to the study of diseases peculiar to children. It is intended by Dr. Thomson to merely introduce the subject, and to act as a preparation for the larger works on the diseases of children, and not to supersede them. This it does most admirably. The volume consists really of two parts, and the one which we think the most valuable is that on the examination of sick children. He is at his best when dealing with clinical problems and groups of symptoms, and leads up to a scientific diagnosis most clearly. The latter half of the book does not strike one as being so admirably worked out. "Infant Feeding" and "Food Disorders" do not give the reader the same "value," or do not contain so many golden grains of knowledge as the more difficult clinical puzzles and diagnostic conundrums so cleverly treated of in the beginning of the book.

Chapter I., on "Development and Growth," usefully tabulates the usual causes of stunted growth; it also points out with clearness the differences between the stomachs of infants and adults, and contains observations on sleeplessness in children.

The vexed question of dentition is cautiously handled in the second chapter, too much so perhaps, for we think Dr. Thomson might with safety have been more firm in his denunciation of "*teething*" as a popular cause of disease and death. Dr. Thomson does not entirely agree with many authorities—amongst whom are many foreign physicians—in believing that "*Teething produces teeth and nothing else.*" While recognising that teething may have a remote and predisposing connection with many of its contemporary troubles, we, however, hold that children do not die from "Dentition," and as a cause of death it should never be registered.

Students will find a neat description of "Hutchinson's Teeth"—that well-known sign of inherited syphilis—tersely put on p. 38; also Chapter III. concludes with a most excellent description of congenital syphilis, which should be studied. The paragraphs on the examination of the head in children ought to be read by every practitioner who hopes to be proficient in the diagnosis of children's diseases, while the chapter on "Heart Disease" in childhood is particularly valuable.

"Mental Deficiency" is intelligently dealt with, and the description of "Stomatitis" in this volume is a model of what such a book should contain. Dr. Thomson most wisely has adopted the varieties of this disease so excellently described by Dr. Forchheimer, of Philadelphia, and they are clearly defined.

There is an admirable description of "Scurvy Rickets" and "Infantile Scurvy," frequently called on the Continent "Barlow's Disease," from the original descriptions of the malady by Dr. Barlow of Great Ormond-street Hospital, and from numerous cases of this affection, which we have examined and treated, we can refer the student with confidence to this volume for information on this subject.

We have no hesitation in advising anyone desirous of studying the very great obscurities and peculiarities of the diseases of children to purchase this book, and if he be in earnest he will be rewarded.

In future editions, which are earnestly to be hoped for, we would like to see the weak part alluded to above much strengthened. The printer, publisher, and photographer have done their best for Dr. Thomson.

2. This peculiar pamphlet is a review on infantile tuberculosis. It opens with a paper on "Sub-occipital Disease," describing two cases of luxation of the odontoid process in paralysis, by V. Ménard, of Berck-sur-Mer. There is also a short paper by Dr. Léon Derecq, on "Childhood and Tuberculosis in Paris." We think it a pity that papers which might be of more value if contributed to some widely-read magazine should be confined to such narrow limits as this small journal must necessarily enjoy.

Inflammation of the Bladder and Urinary Fever. By C. MANSELL MOULLIN, M.D., Oxon., F.R.C.S.; Surgeon and Lecturer on Surgery at the London Hospital; Examiner in Surgery at the University of Oxford; Late Radcliffe's Travelling Fellow and Fellow of Pembroke College, Oxford; and Hunterian Professor at the Royal College of Surgeons. London: H. K. Lewis. 1898.

IN his preface the author gives a very satisfactory explanation of the origin of this instructive and carefully prepared volume. "It does not appear to be admitted everywhere as a matter of common knowledge, and beyond dispute, that inflammation of the bladder is always due to micro-organisms, which in the vast majority of instances have invaded it from without; and that what is commonly called urinary fever is nothing but septic intoxication, or septic infection occurring under special conditions. The principles of aseptic surgery seem still to stand in need of an advocate when the bladder is concerned; and it seems to be still necessary to insist upon the fact that catheters are always septic unless they have been thoroughly sterilised."

We congratulate the author warmly upon the way in which he has carried out his self-imposed task. He has given us in this well-printed octavo of 156 pages the bacteriology of the urinary organs and their contents—in a way which, to our thinking, leaves little to be desired.

The author gives us the full advantage of his own extensive reading, of his practical knowledge of bacteriology and of pathology, and of his wide experience as a clinical observer in the domain of cystic surgery. The whole of the contents of the volume forms a sermon on the text which we have quoted from the preface. The author has marshalled his facts and arguments with both taste and skill, and we cordially recommend the perusal of the work before us to every surgical practitioner.

A Vest-Pocket Medical Dictionary: Embracing those Terms and Abbreviations which are commonly found in the Medical Literature of the day, but excluding the Names of Drugs, and many special Anatomical Terms. By ALBERT H. BUCK, M.D. London: Baillière, Tindall & Cox. 1897.

THIS is really an excellent little volume for the student and the busy general practitioner. How we do wish that we had had such a tome for the vest-pocket in our own student days. How much mental wailing and physical gnashing of teeth it would have saved us! Surely the student of the present day, even if burdened with the grievance of an over-stocked curriculum which forces him to bolt his professional pabulum, has the compensating advantages of receiving much of it so exquisitely cooked as not to strain the powers of his mental digestion.

This excellent little lexicon of 527 pages is printed on extremely fine paper—for economy of space, and contains an enormous number of references—quite enough to carry the reader through most of the standard medical literature of the period. We cordially recommend it to the attention of the parties for whose use it has professedly been designed by its judicious compiler—the student and the busy practitioner.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

Our Senses, and How they Serve Us.[a] By PROFESSOR KINKEAD, A.B., M.D.

IN popular language our senses are spoken of as five—hearing, seeing, smelling, tasting, and feeling—this nomenclature fairly describes the special services rendered, but is inaccurate, in so far as it divides into independent entities what is really one, and tends to create the impression that each sense, as it terms it, acts in a manner peculiar to itself, and is not part of the one grand sense of feeling.

What our senses are, and how they serve us, I hope I shall make clear in the course of this lecture, premising, however, that while the subject is long, time is fleeting, and therefore I shall be obliged to omit much, which makes me fear that in endeavouring to avoid being profuse I may become obscure.

It would be impossible to discuss how our senses act and re-act without also speaking of mind and mental action; but while the mind and its functions is an enormous and involved subject, requiring to be looked at from both its physiological and psychological sides, I shall limit my remarks to purely physiological facts, not attempting any definition of mind; nor touching on the constitution of consciousness, the will, the individuality or Ego which differentiates us from each other, nor on "that there is within us a portion of the Divine substance which is not subject to the law of death and dissolution, but which, when the body is no longer fit for its abode, shall seek its own place, as a sentinel dismissed from his post." I shall not, therefore, lead you through the mysterious mazes of metaphysics to the conclusion—What is mind? It is no matter. What is matter? Never mind.

To make myself intelligible I must, however, trespass on the domains of anatomy; my raid into this territory shall be short and rapid, trusting that thus I shall escape wearying you and the fate which often befalls raiders.

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[a] A lecture delivered on January 14th, 1898, before the Literary and Debating Society of the Queen's College, Galway.

In man the nervous organisation has been described as consisting of two great systems—the cerebro-spinal and the sympathetic.

Although recent research points to the conclusion that there is only one, I shall adhere to the old designation, as I am more familiar with it, and it lends itself readily to popular description: but so close is the connection, so intimate the relation, so essential for the functions of intellectual and organic life is the association between the cerebro-spinal and sympathetic, that, for practical purposes, it makes no difference whether we regard them as one system, with distinct duties, or as separate entities; for in the latter case the financial relations, the local and imperial affairs, the imports and exports, the revenue and expenditure, are so wisely arranged, so inextricably bound up together, that one cannot revolt, withdraw from the union, or even take a day off, without involving itself, the other, and the entire body politic in a catastrophe.

The cerebro-spinal system consists of the brain, the spinal cord, and the nerves issuing from them. Both brain and cord are composed of two substances—the grey and white matter: in the brain the grey matter forms the cortex, and surrounds the white; in the spinal cord it is enclosed within the white: the grey matter originates or liberates, never forces; the function of the white is the transmission or conduction of the force liberated.

The brain and spinal cord are double organs, having right and left halves, each capable of separate action, and there is reason to believe that most of the work of the brain is done by one half, usually the left: all parts of the brain are brought into intimate connection, and the halves united to each other by the white substance. The brain may also be considered as divided into two horizontal portions—above, the hemispheres filling the upper and greater portion of the skull, and below, masses of nervous tissue—the basal ganglia—lying on the floor of the skull.

The spinal cord is, in fact, a continuation of the brain, it lies behind the backbone, protected from pressure by arches of bone thrown out from the body of each vertebra, and extends from the brain to low down in the loins, where it terminates in a tail-like arrangement of nerve trunks which pass off to supply the legs: it is not only divided into right and left halves, connected together in the middle, but each half has longitudinal columns; for the purposes of this lecture we need only consider anterior and posterior, the anterior mainly conveying motor impulses, and the posterior sensory impressions.

The brain is brought into connection with all parts of the body by nerves; some proceed directly to and from it, others reach it indirectly, through the spinal cord: the latter leave the cord by two roots, one from each column, and then unite to form a nerve trunk: within each nerve trunk are numbers of nerve fibres, running in pairs, a sensory and motor, and as the nerve trunk passes outwards it diminishes in size, as it is constantly sending off pairs of fibres to supply the muscles, organs, and skin: all along the entire length of the spinal cord these nerve trunks are leaving it at both sides, and thus not only every muscle, but every fibre of a muscle, and every particle of the surface of the skin, is supplied with nerve fibres. Harmony of action and communication between both sides of the cord, and both sides and every portion of the brain, is secured by very complex arrangements, which it would only be confusing and a waste of time to deal with now.

A motor nerve—that is, one which conveys the force that causes a muscle to contract—commences in a motor cell in the grey matter forming the cortex or outer portion of the brain: it passes down in the substance of its own side of the brain, until it reaches the junction of the brain and spinal cord, where it crosses over to the anterior column of the other side, down which it travels in the white matter until it leaves the cord by an anterior root, paying a visit as it does so to the grey matter, where it enters into arrangements and relations with nerve cells, for orderly and harmonious working with other nerves and the other side of the cord, and then goes on to terminate in a muscle fibre.

The course of a sensory fibre is much more complicated: commencing in the skin, it first comes into connection with a ganglion on the posterior root as it enters the posterior column of the cord, where it bifurcates, one division passing downwards for a short distance, the other running up, to arborise round a cell, at the junction of the cord and brain; it then passes over to the other side of the brain, and terminates at a cell in one of the posterior pair of the basal ganglia, from which a new fibre starts, and passes up to arborise around the dendrons of a sensory molecule in the surface layer of the cortex, and round the dendrons of the motor cell from which we started.

Thus the motor cells and sensory molecules are in close connection, and appear to be grouped according to the portion of the body supplied, so that we are able to map out the portions of the cerebral cortex which govern—or, as they are termed, the centres for—various functions, such as sight, speech, and the movements of the arms, legs, &c.; and here I may mention that special sense nerves, such as those of sight, smell, taste and hearing, are not accompanied by motor fibres, though they can, by contiguity and association, excite motor action: thus, when a bad boy explodes a paper bag or squib behind an elderly relative, an aunt for choice, very marked motor results follow, which delighteth the heart of that bad boy; or when those evil-tasting concoctions, which people libellously say men of my profession love to order, are tasted, marvellous motor activity deforms the human face.

Although a sensory and a motor fibre start from the same locality in the brain and travel together, each preserves its individuality, and strictly adheres to its own business: a motor nerve never undertakes the duties of a sensory, nor a sensory of a motor; nor does a sensory nerve, especially if on special sense duty, interchange duties with another; hence it happens that when you have a cold in your head you cannot smell with the tip of your nose or tongue, nor can a blind man see with his ears.

We can now form an idea of how the nervous machinery acts: something makes an impression on some part of the body, it may be a ray of light impinging on the retina of the eye, a vibration knocking on the drum of the ear, an odour entering the nostrils, a caramel melting in the mouth, a pin in the carpet, or a tack, with its business end up, on the seat of our favourite chair: the sensory nerve fibres on duty at the spot transmit the sensation to the cortex of the brain: in the case of special sense nerves, perception, in common sensation, a motor cell is excited, and the result is special sense or muscular action.

"That these results are due to molecular changes in the brain we know, but how it is that molecular changes in the brain-cells coincide with modifications of consciousness, how, for instance, the vibrations of light falling on the retina excite modifications of consciousness, termed visual sensation, is a problem that cannot be solved."

When a sensation is conveyed to the brain it makes an impression, strong or weak, as the exciting cause is powerful, often repeated, or feeble, and this impression is, as it were, registered on the sensory molecules; in like manner the motor cells not only initiate movements in response to sensation, but register the memory of the movements.

Thus the brain becomes the storehouse of all the varied sensations and movements which we experience—the re-excitability of these impressions, their varied combinations, their agreement or disagreement with other like sensations or motions form the basis of knowledge—and, according to Ferrier, the sensory, ideational, and emotional centres are one and the same.

The response to sensory impressions may be independent of the will, thus we cannot control the movements of the muscles of respiration, except so far as to make them subservient to the purposes of speech and exertion. Such actions are termed primarily automatic or instinctive, and as to number appear to depend on the proportion which the basal ganglia bear to the hemispheres, for, where the latter are rudimentary or small, instinctive actions predominate, where the hemispheres are large, convoluted, and overshadow the basal ganglia, as in man, primarily automatic actions are restricted in number.

Thus it takes time for a human infant to learn to convey a morsel to its mouth, while a chick, just out of the shell, will peck at, and pick up, a worm or grain of corn with an accuracy and rapidity which would do credit to an experienced rooster.

The nerve centres, however, grow to the mode in which they are exercised, and actions, at first exercised imperfectly and with difficulty, come by repetition to be performed with ease and precision—nay, more, often unconsciously, they, in a word, become secondarily automatic.

A baby is born into the world with a brain, empty of all but vast future possibilities: it exhibits only primarily automatic actions of breathing, swallowing, and shrieking: if its sensory nerves are irritated, its motor ones respond, "all over the shop;" thus if you tickle the sole of one foot it does not draw that foot away, it kicks wildly with both, throws its arms about, wriggles its entire body, and shouts: in fact it screams frequently, whether it is hungry or happy, pained or pleased, it gives expression to its feelings in the only way it can, by wailing. It is a very curious fact that mothers and nurses can only conceive the causes of infantile cries to be three—hunger, pain, and wind, and that the greatest of these is hunger.

Sensory motor impressions making their mark, the response to stimulation becomes more definite: the infant begins "to take notice"—though still sensory impressions excite more than the proper proportion of motor impulse—it notices, for example, an orange, though it has not a notion of what an orange is, the colour pleasantly stimulates its visual centres, it coos with delight, and oblivious of the fact that the attractive yellow mass is out of its reach and that it cannot grip it with its toes, it works both hands and feet: a happy accident, or indulgent mother, having placed the desired object within its reach, its muscular sense corrects the vague impressions conveyed by the eye, and the process being repeated it learns to judge of distance and the use of its arms.

Grasping seems to be a primarily automatic action, for it has lately been shown that if a stick be placed in the hands of a newly born infant, it not only grasps it, but clings to it with such power that it can be lifted up and kept suspended for some moments.

Walking, however, is different, and far more numerous and complicated sensory motor impulses are brought into play. Not excepting a beginner on the bicycle, "a child learning to walk is the greatest posture master in the world:" sight affords its aid, not merely directing the course but aiding in balancing, though this is chiefly effected by the motor response to the sensory impressions produced by variations of pressure, on the soles, sides of the feet, toes, and heels; and it is only by long practice that the brain cells learn the exact exertion and counter-exertion required to respond to the pressure produced by every varying position in walking, running, or standing still: yet when this co-ordination has been established the ordinary movements of locomotion, though involving the combined action of almost every muscle in the body, are performed automatically.

In a sense walking is under the control of the will: we will to walk and off we go; we will not to walk, and if we are to be moved we must be carried: but the will does not exercise its power on every muscle involved, it simply starts the mechanism already perfected by practice, and then it need not trouble any further, but may direct the attention to something else. It is not, however, necessary even to think of walking, we are seized with a desire to get some thing, or we see some one fall, we go to get it, or rush to pick him up, the impulse to move starts the machinery, and we get there without thinking of or knowing how.

Once started, the tendency is to keep going on, the sensory impressions suggesting the succession of motor acts, until the attention being attracted, the will arrests the movements, or the nervous energy becoming exhausted, it needs the direct influence of will to compel us to proceed: then by direct volitional control we can for a time struggle on, but further exhaustion of the nerve cells takes place, the spurring of the will fails to be effectual, and we are obliged to give up, not having force to go a step further.

This acquired automatic action affords an interesting example of the force of habit, for if the mind be deeply engrossed by a train of thought, we are not only unconscious that we are walking, but of whither we are going, and our legs take over the command, and carry us to whatever place we have been accustomed to go to.

When I lived at West House I daily began my rounds by going down Nun's Island to the Prison: it sometimes happened me to set out with the deliberate intention of going up town, I would become buried in some train of thought before I had reached the turn to Nun's Island, and, to my surprise, I would find myself ringing the bell at the Prison gate when I should have been in Eyre-square.

The performance of a piece of music involves the translation of dots and dashes perceived by the eye, or the remembered succession of sounds received by the ear, if the piece be played from memory, into intricate motor cell activity, throwing into action a large number of muscles, both simultaneously and successively, with varying degrees of force and rapidity: yet practice renders this complicated process so automatic that we not only find a trained musician taking up a piece he has never seen before, and playing it at sight, but a lady, while playing correctly, and with feeling, carrying on a serious conversation, or a most effective flirtation.

Carpenter relates the following case:—"I was standing near the piano, and saw her eyes close, her head fall forwards, and give every manifestation of sleep, save snore aloud, but her playing went on in perfect time, and, in fact, the difficulty was to make her stop. To set her going again it was only necessary to place her hands on the keys, and she would begin a new quadrille, soon relapsing into sleep again, and yet continuing to play well."

When I was at school the head master every evening preached a sermon, after which a hymn was sung before prayers. The head class at that time was working very hard, so that the entire work for the following day had to be prepared at night: we did not get to bed till after twelve, and as we had to get up at six in the morning, it did not take much to put us off to sleep in the evening, in fact, we conscientiously slept soundly through the doctor's three quarters of an hour sermon: of course standing up to sing the hymn woke us, but before the first verse was half through most of us were off sound asleep again: I have often seen the class balancing themselves with their fingers on the table, as fast asleep as if in bed, singing away lustily: I cannot vouch for the words, but the tune went on all right.

The following example of the same class of acquired aptitudes is furnished by the celebrated conjuror, Robert Houdin:—

With a view to cultivating the rapidity of visual and tactile perception, and the precision of respondent motions, which are necessary for success in every kind of prestidigitation, he early practised the art of juggling with balls in the air, and having become master of the art of keeping up four balls at once, he placed a book before him, and while the balls were in the air accustomed himself to read without hesitation; and he adds, though thirty years have elapsed since the time I was writing, and though I have scarcely touched the balls during that period, I can still manage to read with ease while keeping three balls up.

This last fact is significant, it shows that not only do the nerve centres grow to the mode in which they are exercised, but that this mechanism, having been originally so shaped at an early period of life, is kept up by nutritive action, even though not called into use, just as traces of our early mental acquirements are persistently retained in our organism long after we have lost conscious memory of them.

"We are all part of what we have seen and experienced; we all carry with us through life somewhat of the scenes through which we have passed in childhood."

Sensory motor impressions bring our consciousness into relation with the external world, and teach us all about it, recognising this, metaphysicians have discussed it after their own fashion, and have been led to express doubts as to the existence of anything outside us; indeed, one celebrated member of the order came to the conclusion that there was no external world, that all that seemed to exist around us was the creation of our senses: I have no doubt that those of us who are not metaphysicians agree with Byron, that "When Berkeley said there was no matter, and proved it too, it was no matter what he said."

From all parts of our bodies sensations are, at all times, flowing to the molecules of our brains: rays of light from every object within the range of vision impinge on the retina, the thousand and one sounds surrounding us pour through the portals of our ears, odours, though not always of Araby the blessed, assail our nostrils, and something or other touches or tickles the skin: yet most of them pass unnoticed, partly because consciousness cannot effectively attend to more than one thing at a time, partly from defective training, and partly because the will, though it cannot originate perception, fixes—especially in emotional states—the attention on specific sensations, or concentrates it on subjects of thought, to the exclusion of all other.

Thus, in the field of battle, wounds, in the excitement of the combat, are often unfelt, and the Indian at the stake, with smiling face, vaunts his personal prowess and sings the superiority of his tribe. It is recorded of Robert Hall that some of his most eloquent sermons were preached when suffering from a most painful bodily disorder: so long as he was preaching he was unconscious of the torment which caused him to roll in agony on the floor as soon as he descended from the pulpit.

In some the concentration of attention, while not extending to insensibility to pain, produces the condition known as absence of mind. Of a clergyman thus afflicted it was alleged that he put his watch in the saucepan, and held the egg in his hand while he timed its boiling: I am, however, sceptical as to the accuracy of the assertion that, on his return home one very wet night from a sick call, he put his trousers to bed, and hung himself over the back of a chair to dry.

"Of Dr. Robert Hamilton, a well-known professor at Aberdeen, who was the author of many productions, distinguished for their profound and accurate science, their beautiful arrangement, and their clear expression, we are informed that, 'In public the man was a shadow, pulled off his hat to his own wife in the streets, and apologised for not having the pleasure of her acquaintance: went to his classes in the college, on dark mornings, with one of her white stockings on one leg, and one of his own black ones on the other: often spent the whole time of the meeting in moving from the table the caps of the students, which they as constantly returned; sometimes invited them to call on him, and then fined them for coming to insult him: he would run against a cow in the road, turn round, beg her pardon, call her madam, and hope she was not hurt: at other times he would run against posts and chide them for not getting out of the way.'"

How frequently the opposite state of inattention, or the rapid transference of attention from one sensation to another, causes sensory impressions to be ignored, is familiar to us all: we do not see what is before our eyes, or feel what is under our fingers, yet, just as habits of motion are acquired by training, so can also habits of accurate and rapid perception; and when the senses are cultivated, the results seem little short of the miraculous.

Houdin relates, in his autobiography, how he prepared himself and his son for the performance of the trick which he termed "second sight." In the first instance he put down one dominoe, and required his son to name the number of spots, without counting them, which each could readily do: two dominoes were then tried, and a little practice enabled them to tell the number of spots correctly at the first glance: next day they succeeded in naming the spots on four, the following day on six, and at length they were able to give at a glance, and without counting, the number of points on twelve. They then practised at a more difficult task for over a month. They passed rapidly before a toy shop, or any other display of a variety of wares, casting an attentive glance as they passed: then each drew a paper from his pocket, and tried which could enumerate the greater number of articles thus momentarily seen in passing, the son was often able to write down 40 objects, whilst the father could scarcely reach 30, yet, on returning to verify his statement, he was rarely found to have made a mistake.

Each and all our senses can be trained to a very high degree of perceptive power, and can be taught to harmonise with and help or correct each other. Concentration of attention on any particular sense, especially if it be so great as to exclude consciousness of other sense impressions, raises the perception of that sense to a marvellous degree of acuteness.

Thus, in what is termed "thought reading," the operator must be blindfolded, to exclude the distracting effects of sight; the room must be still; he must be in physical contact with the thinker, and have his mind concentrated on the indications afforded by his unconscious muscular movements, or his changes of temperature: the subject thought of must be comparatively simple, such as the number of a bank note, or the place where a pin or some other object is concealed, so that it can be easily and distinctly remembered, and the thinker must think of it all the time: these conditions being fulfilled, the practised operator writes down the number of the note, or finds the hidden treasure.

It seems so wonderful that he does so that it is alleged either that there is collusion between the parties, or that the thought reader possesses some peculiar power of mental projection which enables him to read the thoughts of the other's mind.

That mental influence or force may be projected through space, or pass from mind to mind, without bodily contact or written or spoken word, I neither affirm nor deny. It is not so long ago since it was deemed essential for the transmission of electrical force that it should travel along conductors, and that it was held impossible to project messages through the air: it is only very recently that we have learned that rays of light can be made to traverse substances hitherto deemed impervious to them; we can only be devoutly thankful that while they expose our bones in glaring nudity, they do not yet reveal the secrets of our hearts.

But there is no need to assume either alternative—that the phenomena are produced by honester or simpler methods, that is, by the trained acuteness of the sensory apparatus of the thought reader, appreciating and interpreting the involuntary guidance given by the thinker, I shall now proceed to show: (*a*) many deaf and dumb persons acquire the power of lip-reading—that is, of so interpreting the visible movements of the mouth and lips of a speaker as to apprehend the words uttered no less accurately than if they were heard: (*b*) persons posing as spiritualistic mediums have been able to state what was written down, or to answer written questions, without seeing or being told what was written, so long as the writing was done in their presence, although the writer was partially screened from view, but utterly failed when the writer was so placed, or screened, that they could neither see him, nor the top of the pen, nor hear the sound of it: (*c*) a skilled telegraphist can as easily and correctly transcribe a message from the sound of the clicks of the needle as he can from using his eyes: (*d*) some blind persons can walk through crowded streets, avoiding jostling the passers by, and collision with obstacles, just as if they had the use of their eyes: (*e*) many sleep walkers move about in the dark, or with their eyes shut, avoiding obstacles, and performing complicated actions, with as much facility, accuracy, and precision as they do when awake; the other senses being shut off, the cutaneous sensibility becomes so exalted that the cushion of air or change of temperature, on approaching a solid body, is perceived.

(*To be continued.*)

SUPERFLUOUS TOOTH IN THE FLOOR OF THE NOSTRIL.

R. F. Harrell and O. Joachim both report in the *New Orleans Medical and Surgical Journal*, a case of a superfluous tooth in the floor of the nostril. In the case of the former, the patient had suffered six years from great pain, involving the whole right side of the face, and a purulent discharge from the right nostril. The removal of a superfluous tooth, which was found protruding from the floor of the right nostril, caused a subsidence of all symptoms. In the second case, the superfluous tooth was found accidentally while treating the patient for specific ulceration of the nasal septum. This tooth also proved to be a canine, but had given rise to no symptoms, except a non-purulent discharge from the right nostril.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Edward H. Bennett, M.D., F.R.C.S.I.
General Secretary—John B. Story, M.B., F.R.C.S.I.

SECTION OF MEDICINE.

President—Sir George F. Duffey, M.D., President of the Royal College of Physicians of Ireland.

Sectional Secretary—R. Travers Smith, M.D.

Friday, April 15, 1898.

The President in the Chair.

A Case of Cerebral Abscess. (*Specimen.*)

Dr. J. J. Burgess read a paper on this subject. [It will be found in Vol. CV., page 487.]

Dr. E. H. Bennett thought the specimen a very remarkable and very rare one of chronic abscess of the brain, existing and giving sufficient characteristic symptoms for over two years. Probably a blood clot in the arachnoid was the primary lesion, and suppuration took place in it. He thought that operative interference would have had a bad result in the case.

Dr. Falkiner asked Dr. Bennett why he thought that operative interference would have produced a more rapid fatal result? He himself would have been in favour of surgical interference.

Dr. Knott gave a case of cerebral abscess in which the distinct symptoms were persistent headache, sleeplessness, a feeling of being miserable, and constipation. These symptoms were present for months, and subsequently the usual symptoms of lesion in base of brain developed, and patient died comatose. *Post-mortem* showed the base of brain quite normal, but nearly the whole of one cerebral hemisphere was excavated by a cerebral abscess. It had often occurred to him that a good many of the misleading factors in regard to the localisation were owing to the fact that the brain is soft and partly a semi-fluid substance, and would partly obey Pascal's Law of Pressure, causing the pressure to extend all around.

Dr. J. J. Burgess, in reply to Dr. Finny, said that he had believed the case to be possibly one of abscess from the duration of the pain. Tuberculosis might be put out of the question.

Another reason was the slow cerebration exhibited. There was distinct loss of knee-jerk on the left side. He thought the Jacksonian epilepsy and continual headache justified an operation.

Laryngeal Ulceration in the Advanced Stage of Typhoid Fever.

Dr. Finny read notes on a case of this disease. [They will be found in Vol. CV., page 369.]

Some Remarks on Typhoid Fever.

Dr. H. C. Drury read a paper on the above. [It will be found at page 115.}

Dr. Littledale had some experience with the Widal reaction, having tested 51 cases of fever more or less in routine in Sir P. Dun's Hospital. A case was sent in as scarlatina, without any rash, but with sore throat; Widal reaction absolute, all the bacilli immediately going into clumps. He used nine drops of serum and one of blood. In another case the diagnosis between typhoid and acute tuberculosis had to be made. Widal test showed some clumping and faint diminution of motion; but even after 20 hours there was plenty of movement across the field. He gave another case where, on the seventh day of illness, the temperature dropped from 103° to 97°, where it remained. There were absolutely no signs of pneumonia; but the case gave the diazo reaction, and a doubtful sort of Widal. With the Widal reaction there were two kinds of motion—molecular motion, which occurs in most typhoid cases for half an hour, and true motion, which, as a rule, is not seen in typhoid cases. As regards clumping, in cases of typhoid after a clump is formed a bacillus will never leave a clump, whereas in other non-typhoid cases two or three bacilli will leave the clump and go across the field. He thought that the Widal reaction sometimes left one in doubt. In ordinary cases he was disposed to think that they diluted too much.

Dr. Burgess agreed with Dr. Drury regarding the treatment of typhoid fever with purgatives. He had tried purgatives for many years, and never found any bad results. Cases of constipation, with moderate fever, he treated with purgatives, which he thought was better treatment than administering enemas of soap and water.

Dr. J. W. Moore drew attention to the great frequency of constipation in typhoid fever. Constipation was sometimes the most troublesome thing to treat in typhoid. He agreed entirely with the treatment by purgatives. He thought it good, particularly in children, to add a teaspoonful of glycerine to one of castor oil in a small wineglassful of milk. By so doing, one combined a certain amount of nourishment, and he was satisfied that the glycerine had a certain antiseptic effect but no aperient effect. Calomel was the best aperient in the earlier stages, from two to five grains in the first week of the fever.

Dr. N. Falkiner asked the speakers to state their views on the administration of purgatives in all the stages of the fever, and what purgatives would they use. Dr. Gordon long ago taught that the safest purgative was solution of magnesia of the pharmacopœia, which was exceedingly mild.

Dr. Knott said that cases which he had seen of typhoid with constipation certainly presented a great deal more stupor and approximation to typhus.

Dr. Finny said if the course of the disease is allowed to run itself, the tendency is towards improvement and recovery; and he thought it was over-care and over-treatment that was so harmful.

Dr. W. G. Smith said that, speaking generally, in typhoid fever the less interference the better. Matters calling for interference were diet, bowels, and nervous symptoms. He was not in favour of early resort to solid diet soon after apyrexia is established. Dietetics of a typhoid patient ought to be managed on the same general physiological principles that diet is given on. A typhoid patient required a proper proportion not only of proteids, but also of carbohydrates and fats. Carbohydrates could easily be added. Cream, as a rule, was well borne by typhoid patients. He remarked that fish was not the innocuous thing it was generally supposed to be, as it seemed to act as an irritant, and was, he thought, more dangerous than a tender mutton chop. The question of the bed-pan was one of common sense. He was in favour of aperients in constipation, as the latter tended to precipitate perforation. He gave castor oil and calomel by the mouth, and enemata when necessary. With regard to the action of calomel, he thought it probable that it made some sort of an albuminous compound with the gastro-intestinal contents of the intestine.

Dr. Drury, in reply, said that Dr. Finny must have misunderstood him, as it was his (Dr. Drury's) wish to say that the discretion of the doctor should be used in certain directions. He distinctly said that there was no routine in the giving of any purgative or treatment, that it was routine that killed, that he did not treat typhoid fever by purgatives, but that he preferred typhoid fever to work out its own ends, and only treat symptoms if necessary. With regard to the use of the bed-chair, it was merely to show that certain things could be done which he knew a good many men feared to do.

SECTION OF STATE MEDICINE.

President—H. C. Tweedy, M.D.

Sectional Secretary—Ninian Falkiner, M.B.

Friday, April 29, 1898.

The President in the Chair.

A Special Method of Performing the Sero-diagnostic Test for Typhoid Fever.

Dr. McWeeney demonstrated a method which he had introduced with a view to clear up the diagnosis in cases which did not give the agglutination phenomenon with sufficient distinctness. His plan was to cause the typhus bacillus to grow in a hanging drop of broth containing a small percentage (generally 1 per cent.) of the suspected serum. After four hours at 37° C. the preparation is examined, when, should the serum be from a typhoid case, the bacilli will be found to have grown out into beautiful chains, which at the end of twenty-four hours are exquisitely twisted and convoluted; motility is quite absent. If, on the other hand, the serum is non-typhoid, the bacilli are separate and freely motile. They are usually short, but occasionally grow out into filaments, especially if the temperature is low; but these filaments must be carefully distinguished from the chaining which takes place with the homologous serum. He submitted microscopic preparations showing ordinary agglutination and chain formation both fresh and stained, also demonstrated microphotography illustrating the two methods, by means of optical lanterns.

On the Mortality of Children in Ireland.

Dr. Langford Symes contributed a paper on this subject. [It will be found in Vol. CV., page 479.]

Dr. Grimshaw (Registrar-General) said that in a great many of the deaths of children there was never any diagnosis made, there having been no medical attendant. Again, the medical man was only called in, in other cases, at the very last moment, and then for the purpose of giving a certificate for the insurance company. These two facts tended very much to damage the accuracy of such statistics. It was a question whether a medical certificate should be given in cases where the doctor was called in at the last moment and had no opportunity of making a diagnosis. He thought that the withholding of a certificate in a doubtful case had a most beneficial result, and should be always exercised by the medical attendant. Again, when a certificate was withheld the coroner should interfere. Medical men should be very particular as to what they put on death certificates; for instance, the primary cause might have been discovered in many of the cases recorded as "convulsions." He believed that, if there was better accommodation for children in hospitals, a great many of them would be better attended to. He thought that students were not sufficiently trained in the treatment of diseases of children.

Dr. Doyle said he had never been able to arrive at primary causes of diseases. Secondary and tertiary causes were easily arrived at. He maintained that convulsions, tuberculosis, meningitis, chorea, diphtheria, croup, whooping-cough lay within the province of the surgeon, and not the physician. Granular conditions in nares and back of pharynx often accounted for such diseases as convulsions. Whooping-cough could be cured but by the surgeon. The condition at the back of the fauces and nares should be attended to. Whooping-cough was caused by the continuous and repeated reinfection from the Eustachian tubes and back of the pharynx. Similar remarks applied to tuberculosis. There was still room in Dublin for more children's hospitals.

Dr. Falkiner said that Dr. Symes' Table No. I. showed the death-rate to be practically 1,000 per month in Dublin. If a new hospital were founded, room would have to be provided for all the sick children, those who die in the month, representing, perhaps, only one per cent. of all the sick children. He thought that the establishment of a new hospital with fifty beds would not have the smallest effect on the death-rate. His opinion was that medical relief was carried to the darkest parts of Dublin, and carried efficiently. The onus of neglected children was much more on the Government and the people of the country than on the doctors, who did the work as well as they could. The matter of certifying for children in doubtful cases had caused him much trouble and worry for the last ten years. If a child dying of neglect were brought to a doctor, if the doctor believed the child to be dying of neglect it was his duty to see that the child was properly looked after. When a child dying of neglect was brought to him it was his custom to write to the Inspector of the National Society for the Prevention of Cruelty to Children, who generally succeeded in having the child cared for.

Dr. Turner dwelt on the great importance of having students properly taught the diseases of children. In Dublin, he thought, there was a great necessity for having an institute for children, where students would have an opportunity to study and receive instruction which would enable them to be successful practitioners among infants. He found it a much more difficult thing to treat infants than adults.

The President (Dr. Tweedy) said that it seemed to him that a large number of cases mentioned under the heading "Debility, Atrophy, Inanition," really came under the head of Preventive Medicine, and were largely due to unsanitary conditions generally, and also to the ignorance of parents. The system of feeding children was often most barbarous, starchy foods being continually given to infants. Children, he thought, might be admitted more often to the general hospitals in Dublin. It would be difficult to start a new hospital since there were already so many. Dispensary doctors had a great deal to do in attending the *parents* themselves, and had not possibly the time to devote to children that they required. The dispensary doctor naturally thought that his chief attention should be devoted to the bread-winners—the parents. What was the use of writing a prescription for a child when what it really wanted was warmth, cleanliness, food, &c.? The district nurse would be almost more useful in such cases than the doctor. If public contributions were given more towards children's wards in hospitals it would be a step in the right direction.

Dr. Symes (in reply) said it was a great relief to him to find that so many cases tabulated as "Indefinite" were cases in which the profession had really no hand at all. He agreed with the Registrar-General that the coroner should be communicated with in all cases where a medical certificate was not procurable. He endorsed Dr. Turner's remarks on the teaching of students. He was greatly relieved to hear that Dr. Doyle could cure consumption and whooping-cough by surgical methods. However, he thought that surgery had nothing to do with the deaths in the Tables. He thought there were already enough hospitals in Dublin, and that an amalgamation of some of them would be beneficial.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
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Vital Statistics

For four weeks ending Saturday, July 16, 1898.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Average Rate for 4 weeks	Towns	Weeks ending				Average Rate for 4 weeks
	June 25	July 2	July 9	July 16			June 25	July 2	July 9	July 16	
23 Town Districts	20·9	21·3	18·7	18·1	19·7	Limerick -	9·8	25·3	11·2	25·3	17·9
Armagh -	14·3	28·5	14·3	28·5	21·4	Lisburn -	17·0	17·0	8·5	17·0	14·3
Ballymena	39·5	5·6	39·5	5·6	22·5	Londonderry	18·8	17·3	23·6	20·4	20·0
Belfast -	18·5	23·1	19·5	20·4	20·4	Lurgan -	9·1	9·1	9·1	18·2	11·4
Carrickfergus	11·7	0·0	5·8	17·5	8·8	Newry -	24·1	8·1	8·1	12·1	13·1
Clonmel -	24·3	34·1	19·5	14·6	23·1	Newtownards	17·0	17·0	5·7	11·3	12·8
Cork -	28·4	16·6	18·7	17·3	20·2	Portadown	18·6	12·4	6·2	18·6	14·0
Drogheda -	22·8	19·0	19·0	3·8	16·2	Queenstown	28·7	11·5	17·2	0·0	14·4
Dublin -	22·1	20·7	19·7	17·6	20·0	Sligo -	10·2	15·2	25·4	5·1	14·0
Dundalk -	12·6	0·0	4·2	29·3	11·5	Tralee -	33·6	67·2	11·2	11·2	30·8
Galway -	18·9	30·2	7·6	22·7	19·8	Waterford	21·9	29·8	19·9	15·9	21·9
Kilkenny -	51·9	51·9	42·5	9·4	38·9	Wexford -	22·6	13·5	31·6	9·0	19·2

In the week ending Saturday, June 25, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 14·5), was equal to an average annual death-rate of 15·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·5 per 1,000. In Glasgow the rate was 20·0. In Edinburgh it was 17·8.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 20·9 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in eleven of the districts to 11·2 in Tralee—the 6 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 108 deaths from all causes registered in Belfast are 1 from measles, 1 from diphtheria, 1 from simple continued fever, and 6 from enteric fever. The 41 deaths in Cork comprise 1 from each of the following:—typhus, whooping-cough, and diarrhœa.

In the Dublin Registration District the registered births amounted to 202—92 boys and 110 girls; and the registered deaths to 153—62 males and 91 females.

The deaths, which are 6 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·8 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 22·1 per 1,000. During the first twenty-five weeks of the year the death-rate averaged 28·2, and was 1·1 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 13, being 3 over the low number for each of the two weeks preceding, but 4 under the average for the twenty-fifth week of the last ten years. The 13 deaths comprise 2 from influenza and its complications, 5 from whooping-cough, 2 from diphtheria, 1 from cholerine, and 1 from diarrhœa.

Only 7 cases of scarlatina were admitted to hospital, being 11 under the admissions in the preceding week, and showing a decline of 15 as compared with the number admitted in the week ended June 11th. Twenty-seven scarlatina patients were discharged, and 100 remained under treatment on Saturday, being 20 under the number in hospital at the close of the preceding week. There were also 19 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 9, being 1 under the admissions in the preceding week, and 11 under the number admitted in the week ended June 11. Nine patients were discharged, 3 died, and 62 remained under treatment on Saturday, being 8 under the number in hospital on that day week.

Three cases of measles were admitted to hospital; 6 cases of the disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had fallen from 30 in the week ended June 11 to 15 in the following week, rose to 27, or 2 over the average for the corresponding week of the last ten years. The 27 deaths consist of 16 from bronchitis, 10 from pneumonia, and 1 from croup.

In the week ending Saturday, July 2, the mortality in thirty-three large English towns, including London (in which the rate was 14·5), was equal to an average annual death-rate of 14·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·1 per 1,000. In Glasgow and also in Edinburgh the rate was 21·3.

The average annual death-rate in the twenty-three principal town districts of Ireland was 21·3 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in fifteen of the districts to 7·0 in Limerick—the 18 deaths from all causes registered in that district comprising 1 from typhus and 4 from whooping cough. Among the 135 deaths from all causes registered in Belfast are 2 from measles, 2 from whooping-cough, 2 from diphtheria, 5 from enteric fever, and 10 from diarrhœa. The 11 deaths in Londonderry comprise 1 from measles and 1 from whooping-cough.

In the Dublin Registration District the registered births amounted to 270—143 boys and 127 girls; and the registered deaths to 146—74 males and 72 females.

The deaths, which are 12 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·8 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 20·7 per 1,000. During the twenty-six weeks ending with Saturday, July 2, the death-rate averaged 28·0, and was 1·1 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 17, being 3 below the average for the 26th week of the last ten years. The 17 deaths comprise 2 from scarlet fever (scarlatina), 2 from influenza and its complications, one from whooping-cough, one from diptheria, 2 from cerebro-spinal meningitis, 4 from enteric fever, 2 from diarrhœa, and 1 from dysentery.

Eighteen cases of scarlatina were admitted to hospital, being 11 over the admissions in the preceding week. Eleven scarlatina patients were discharged, 1 died, and 106 remained under treatment on Saturday, being 6 over the number in hospital on that day week. There was also 20 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital rose to 16. Nineteen patients were discharged, and 59 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 21, being one below the average for the corresponding week of the last ten years, and 6 under the number for the previous week. The 21 deaths consist of 10 from bronchitis and 11 from pneumonia.

In the week ending Saturday, July 9, the mortality in thirty-three large English towns, including London (in which the rate was 14·2), was equal to an average annual death-rate of 14·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·0 per 1,000. In Glasgow the rate was 20·7, and in Edinburgh it was 20·4.

The average annual death-rate in the twenty-three principal town districts of Ireland was 18·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·1 per 1,000, the rates varying from 0·0 in seventeen of the districts to 14·2 in Kilkenny—the 9 deaths from all causes registered in that district comprising 3 from diarrhœa. Among the 114 deaths from all causes registered in Belfast are 1 from measles, 2 from diphtheria, 4 from enteric fever, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 203—104 boys and 99 girls; and the registered deaths to 136—65 males and 71 females.

The deaths, which are 13 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·3 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 19·7 per 1,000. During the first twenty-seven weeks of 1898 the death-rate averaged 27·7, and was 1·2 under the mean rate in the corresponding period of the ten years 1888–1897.

Only 8 deaths from zymotic diseases were registered, being 12 below the average for the corresponding week of the last ten years, and 9 under the number for the previous week. They comprise 2 from scarlet fever (scarlatina), one from influenza, 3 from whooping-cough, and one from simple continued fever.

As in the preceding week, 18 cases of scarlatina were admitted to hospital. Twenty-one scarlatina patients were discharged, 2 died, and 101 remained under treatment on Saturday, being 5 under the number in hospital at the close of the preceding week. This number is exclusive of 21 convalescents at Beneavin.

Twenty-four cases of enteric fever were admitted to hospital against 16 in the preceding week and 9 in the week ended June 25. Twenty patients were discharged, 1 died, and 62 remained under treatment on Saturday, being 3 over the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 18, being 3 under the number for the preceding week and 2 under the average for the twenty-seventh week of the last ten years. The 18 deaths comprise 10 from bronchitis, 6 from pneumonia, and 1 from croup.

In the week ending Saturday, July 16, the mortality in thirty-three large English towns, including London (in which the rate was 14·1), was equal to an average annual death-rate of 14·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·5 per 1,000. In Glasgow the rate was 17·9 per 1,000, and in Edinburgh it was 18·3.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 18·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 0·9 per 1,000, the rates varying from 0·0 in eighteen of the districts to 4·6 in Lurgan—the 4 deaths from all causes registered in that district comprising 1 from measles. Among the 119 deaths from all causes registered in Belfast are 1 from whooping-cough, 2 from diphtheria, 6 from enteric fever, and 2 from diarrhœa. The Registrar for Tralee No. 2 District remarks—"Three cases of typhus fever occurred in the district during the week, one of which died."

In the Dublin Registration District the registered births amounted to 165—87 boys and 78 girls; and the registered deaths to 124—67 males and 57 females.

The deaths, which are 21 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 18·5 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 17·6 per 1,000. During the twenty-eight weeks ending with Saturday, July 16, the death-rate averaged 27·4, and was 1·2 under the mean rate in the corresponding period of the ten years 1888–1897.

Only 5 deaths from zymotic diseases were registered, being 3 under the low number for the preceding week, and 15 below the average for the twenty-eighth week of the last ten years. They comprise 1 from scarlet fever (scarlatina), 1 from whooping-cough, and 1 from diarrhœa.

The number of cases of scarlatina admitted to hospital was 11, being 7 under the admissions in each of the two weeks preceding. Twenty-three scarlatina patients were discharged, and 89 remained under treatment on Saturday, being 12 under the number in hospital on that day week. There were, in addition, 20 convalescents at Beneavin, Glasnevin.

The weekly number of cases of enteric fever admitted to hospital rose to 26. Thirteen patients were discharged, and 75 remained under treatment on Saturday, being 13 over the number in hospital at the close of the preceding week.

The hospital admissions included, also, 3 cases of diphtheria; 8 cases of the disease remained under treatment in hospital on Saturday.

Twenty-one deaths from diseases of the respiratory system were registered, being equal to the average for the corresponding week of the last ten years, and 3 over the number for the previous week. They comprise 10 from bronchitis and 8 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' *N., Long.* 6° 15' *W., for the Month of July,* 1898.

Mean Height of Barometer, - - -	30·145 inches.
Maximal Height of Barometer (on 11th, 9 a.m.),	30·445 „
Minimal Height of Barometer (on 22nd, 3 p.m.),	29·661 „
Mean Dry-bulb Temperature, - -	60·2°
Mean Wet-bulb Temperature, - -	56·0°.
Mean Dew-point Temperature, - -	52·3°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·392 inch.
Mean Humidity, - - - -	75·6 per cent.
Highest Temperature in Shade (on 11th), -	75·2°
Lowest Temperature in Shade (on 4th), -	44·9°
Lowest Temperature on Grass (Radiation) on 30th), - - - - -	40·8°.
Mean Amount of Cloud, - - -	55·0 per cent.
Rainfall (on 8 days), - - -	·945 inch.
Greatest Daily Rainfall (on 22nd), - -	·342 inch.
General Directions of Wind, - - -	N.W., W.

Remarks.

Strangely like July, 1897, this month was very fine and dry, with a mean temperature slightly above the average. Of the total scanty rainfall (·945 inch) 61·5 per cent. (·581 inch) fell on the 21st and 22nd. Throughout the month the barometer ruled high over Ireland, where the isobars ran anticyclonically. Over Northern Europe, on the contrary, conditions were cyclonic, and depressions followed each other in rapid succession from W. to E. or N.W. to S.E.

On the 22nd a cyclonic system passed north-eastwards across the South of Ireland, causing the only really broken weather of the month.

In Dublin the arithmetical mean temperature (61·1°) was slightly above the average (60·6°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 60·2°. In the thirty-three years ending with 1897, July was coldest in 1879 ("the cold year") (M. T.=57·2°). It was warmest in 1887 (M. T.= 63·7°); and in 1868 (the "warm year") (M. T.=63·5°). In 1897 the M. T. was 61·1°.

The mean height of the barometer was 30·145 inches, or 0·230 inch above the corrected average value for July—namely, 29·915 inches. The mercury marked 30·445 inches at 9 a.m. of the 11th, and fell to ·29·661 inches at 3 p.m. of the 22nd. The observed range of atmospheric pressure was, therefore, 0·784 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 60·2°, or 2·8° above the value for June, 1898. Using the formula, *Mean Temp.*= *Min.* + (*max.* — *min.* × ·465), the value was 60·6°, or 0·4° above the average mean temperature for July, calculated in the same way, in the twenty-five years, 1865–89, inclusive (60·2°). The arithmetical mean of the maximal and minimal readings was 61·1°, compared with a twenty-five years' average of 60·6°. These values were identical with those recorded in July, 1897. On the 11th the thermometer in the screen rose to 75·2°—wind, W.; on the 4th the temperature fell to 44·9°—wind, N. The minimum on the grass was 40·8°, on the 30th.

The rainfall was only ·945 inch, distributed over 8 days. The average rainfall for July in the twenty-five years, 1865–89, inclusive, was 2·420 inches, and the average number of rainy days was 17·2. The rainfall, therefore, and also the rainy days, were much below the average. In 1880 the rainfall in July was very large—6·087 inches on 24 days; in 1896, also, 5·474 inches fell on 18 days; and in 1895, 4·503 inches on 16 days. On the other hand, in 1870, only ·539 inch was measured on 8 days; in 1869, the fall was only ·739 inch on 9 days; and in 1868, only ·741 inch fell on but 5 days.

High winds were noted on 9 days, but attained the force of a gale on only one occasion—the 18th. Temperature reached or exceeded 70° in the screen on 7 days. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In 1888 the maximum for July was only 68·7°.

Thunder occurred on the 22nd. A solar halo was seen on the 20th. The atmosphere was rather foggy on the 9th and 22nd.

Friday, the 1st, was cool and changeable. A light sea-breeze prevailed until 2 p.m., when rain set in and fell heavily for 4 hours, the measurement being ·250 inch. Saturday, the 2nd, was chiefly fine but not settled.

Very fine and, in the end, brilliant weather was enjoyed during the week ended Saturday, the 9th, throughout which a high atmospheric pressure held off the west or south-west of Ireland. On the other hand, depressions of no great depth crossed Scandinavia in an easterly direction one after another. Northerly winds prevailed in the British Isles, and the nights were at first often very sharp for the time of year—39° F. being registered at Wick on Sunday, and at Parsonstown on Monday morning; 42° at Donaghadee, Parsonstown, and Valentia Island on Tuesday morning. Sunday was a beautiful day near Dublin, and in the evening a fine partial eclipse of the moon was well seen in a clear sky. Temperature rose on Tuesday, and fresh W. to N.W. winds blew on that and the following day, accompanied by a great deal of cloud. On Thursday very slight drizzle was observed once or twice, but no measurable rainfall occurred. Friday and Saturday were days of brilliant sunshine and cool easterly sea-breezes in the daytime. Towards evening on Saturday some fog and haze were observed. In Dublin the mean height of the barometer was 30·273 inches, the range of pressure being from 30·037 inches at 9 a.m. of Sunday (wind, N.W.) to 30·365 inches at 9 p.m. of Saturday (wind, E.N.E.). The corrected mean temperature was 58·8°. The mean dry-bulb reading at 9 a.m. and 9 p.m. was 59·1°. On Wednesday and also on Thursday the thermometer rose to 69·8° in the screen, having fallen to 44·9° on Monday. N.W. winds prevailed. There was no measurable rainfall.

The record of the week ended Saturday, the 16th, is again one of fine summerlike weather, with prevalent north-westerly winds. The barometer was usually highest to the west or south of Ireland, and in this country the isobars ran anticyclonically, except on Wednesday, when a rather large depression passed across Scandinavia from N.N.W. to S.S.E. The first two days were very fine, warm, and sunny. On Monday the thermometer rose to 75·2° in the shade in Dublin. A slight shower fell at this station early on Tuesday morning, yielding only ·003 inch in the rain-gauge. The day was cloudy and unsettled-looking, with a fresh W.N.W. wind. Wednesday was cloudy to fair. Some rain fell in the extreme W. and S.W. of Ireland, and also in the E. and S.E. of Great Britain. This slight break in the weather was connected with the presence of a depression over Scandinavia, where rain fell more abundantly than in the British Isles. The last three days of the week were fine with a good deal of cloud at times. On Friday the thermometer rose to 82° in the shade in London. In Dublin the mean height of the barometer was 30·220 inches, pressure ranging from 30·445 inches at 9 a.m. of Monday (wind N.N.W.) to 30·008 inches at 9 a.m. of Wednesday (wind N.W.). The corrected mean temperature was 62·7°. The mean dry-bulb temperature was 62·4°. On Monday the screened thermometers rose to 75·2°, having fallen to 51·5° on Sunday. N.W. winds prevailed. The rainfall amounted to but a trace—·004 inch, and there was not even one "rainy day."

Although by no means so settled as in the two preceding weeks, the weather during the week ended Saturday, the 23rd, was favourable, and a genial rainfall beautified the country. By Monday morning a trough-shaped depression had advanced over the north of Scotland, and gradients for westerly winds were steep to the southward of the lowest pressure, which was 29·59 inches at Stornoway and Wick. Accordingly strong to squally W. to N.W. winds prevailed, and a moderate gale was felt for a while in and near Dublin. Very little rain fell in connection with this disturbance, which passed quickly on to Scandinavia, becoming much modified in form as it travelled. In its rear an anticyclone of no intensity came in over Ireland, causing quiet and fine but cloudy weather. On Thursday the barometer gave way generally in the west, and by 8 a.m. of Friday a well-marked depression, secondary to a large area of low pressure lying over the Norwegian Sea and Lapland, had arrived off the coast of Kerry. Thence it passed north-eastwards, accompanied by an abundant rainfall and thunder in many places. In its wake the weather cleared and became once more warm and summerlike. In Dublin the mean height of the barometer was 29·959 inches, the range of pressure being from 30·200 inches at 9 a.m. of Sunday (wind N.W.) to 29·661 inches at 3 p.m. of Friday (wind N.E.). The corrected mean temperature was 62·3°. The mean dry-bulb reading at 9 a.m. and 9 p.m. was 61·4°. On Sunday the screened thermometers rose to 72·8°, on Saturday they fell to 53·7. The rainfall was ·605 inch on five days, ·342 inch being measured on Friday, when thunder was heard. The prevailing winds were at first N.W., then E.S.E.

While the weather was for the most part dry during the week ended Saturday, the 30th, it was cooler and more cloudy than in past weeks. Only on Wednesday and Saturday was anything like summer heat felt in Dublin. The barometer was again highest in Ireland, lowest over Northern Europe. On Sunday morning a depression (with central readings as low as 29·15 inches) stretched from Christiania to Stockholm. Cool and strong N. and N.W. winds prevailed in Great Britain. In Ireland the air was calmer. The next two days were chiefly fine and quiet, but a considerable rainfall occurred on Tuesday in the South of Ireland. On Wednesday evening a veil of cirrus cloud appeared in the W. and N.W., heralding the approach of a depression to the Scottish coasts. This disturbance travelled rapidly down the east coast of Great Britain, reaching Holland on Friday morning. It caused showers and a moderate northerly gale on the Irish coasts, but thunderstorms and heavier rains in many parts of England. On Friday morning the measurements were ·55 inch at Nairn, ·54 at Shields, ·60 inch at the North Foreland, ·56 inch at Cambridge, ·99 inch at Yarmouth, and 1·65 inches at the Helder. On Friday night a remarkable depression of air-temperature occurred, the thermometer sinking in Dublin to 45·8° in the screen and to 40·8° on the grass. Curiously enough a few hours later the maximum of the week—71·1°—was recorded in Dublin. In this city the mean height of the barometer was 30·139 inches, pressure varying from 29·994 inches at 9 a.m. of Thursday (wind, N.W.) to 30·288 inches at 9 a.m. of Friday (wind, N.E.). The corrected mean temperature was 59·2°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 58·6°. Rain fell on Wednesday to the amount of ·084 inch. The prevailing winds were E.S.E. and N.W.

The last two days were chiefly fine, but cloudy. On Sunday afternoon, the 31st, a heavy but very local shower fell over the S.E. of Dublin, yielding ·052 inch of rain in the gauge.

The rainfall in Dublin during the seven months ending July 31st amounted to 13·060 inches on 106 days, compared with 15·600 inches on 125 days in 1897, 13·328 inches on 102 days in 1896, 16·785 inches on 96 days in 1895, 18·133 inches on 130 days in 1894, 11·666 inches on 92 days in 1893, 7·935 inches on 80 days in 1887, and a twenty-five years' average of 14·738 inches on 112·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in July was 1·145 inches on 6 days, compared with 1·625 inches on 10 days in 1897, 5·726 inches on 16 days in 1896, 3·680 inches on 16 days in 1895, 3·805 inches on 19 days in 1894, and 1·290 inches on 15 days in 1893. Of the total rainfall ·350 inch fell on the 1st, and ·445 inch on the 21st. The total fall since January 1 has been 14·645 inches on 94 days, compared with 19·750 inches on 116 days in 1897, 13·082 inches on 77 days in 1896, 17·950 inches on 83 days in 1895, 21·186 inches on 115 days in 1894, and 13·066 inches on 90 days in 1893.

At Cloneevin, Killiney, Co. Dublin, the rainfall in July was ·840 inch on 7 days, compared with a twelve years' average of 2·554 inch on 16·3 days. On the 22nd the rainfall was ·350 inch. In July, 1897, 1·28 inches fell on 10 days; in 1896, 6·72 inches on 20 days; in 1895, 3·58 inches on 17 days; in 1894, 4·08 inches on 23 days; in 1885, only ·70 inch on 9 days. Since January 1, 1898, 13·94 inches of rain have fallen on 104 days at this station.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 1·380 inches on 6 days, compared with 1·425 inches on 11 days in July, 1897, ·480 inch being measured on the 21st, and ·425 inch on the 22nd. At this second-order station 16·298 inches of rain have fallen on 94 days since January 1, 1898. The maximal temperature in the shade in July was 76·0° on the 30th, the minimum was 42·8° on the 4th.

PERISCOPE.

SOCIÉTÉ FRANÇAISE D'ÉLECTROTHÉRAPIE.

M. D. LABBÉ, the Secretary-General of this Society, has kindly furnished the following report of the meeting of July 21, 1898:—Dr. Apostoli read a note on the galvanic treatment of vomiting and on its improved operative management. He arrives at these general conclusions—1. Galvanisation of the pneumogastric nerves, applied in accordance with the precise rules formulated by himself in 1882 and 1884 (and which embrace the seat, nature, intensity, duration, time, and number of the applications), is, in most cases, rapidly curative in the vomiting of pregnancy and most of the gastric disturbances of hysteria. 2. The best method of galvanising the pneumogastrics is that which allows the maximum of intensity of the current to be used on the vagus nerve, either by placing the positive pole, single or bifurcated, on this nerve, or, preferably, by placing on each of the vagi a pole of the opposite name. 3. The bi-polar method, utilising as it does the largest sum of the stream-paths (*lignes de flux*) of the galvanic current, which circulate from one pole to the other, is the method to be chosen, superior as to rapidity and efficacy to the mono-polar method, which, having only one active pole (whether single or bifurcated), can utilise (all things being equal in other respects) only the least possible electric intensity or a very small number of the stream-paths of the current. 4. Clinical experience during sixteen years in which Dr. Apostoli has practised the bi-polar method has confirmed the superiority of this method, which he was the first to devise, and its incontestable advantages in the immediate symptomatic cure of the nervous troubles of the pneumogastric (vomiting, gastralgia, nausea). M. R. Huet replied to the last discussion on abnormal reactions of nerves and muscles, which M. Doumer introduced at the June meeting, and criticised the part which direct excitability of the muscles plays, according to him, in the manifestations of abnormal muscle reactions. M. Alvin (of St. Etienne) exhibited a substance endowed with electro-dynamic and caustic properties. This substance is sedative as regards pain. Its calmative action always precedes its caustic action. Employed as an electric agent, it certainly excites tissue-changes; witness its efficacy in controlling the formation of adipose tissues and in the dispersion of encysted tumours which is brought about by it. It is at the same time a resolvent as powerful as any blister; its action is much less injurious, and its activity doubles in proportion to its electric power.

CLOSING ARTERIAL WOUNDS BY SUTURE.

Dr. Heidenhain, in the *Centralb. für Chir.*, cites two previously recorded cases, involving in one instance the common femoral, in the other the common iliac. He also reports a case of his own, in which during the removal of some cancerous glands from under the armpit, and after necessary resection of a portion of the axillary vein, a wound about an inch and a half in length was accidentally made in the main artery. The bleeding was arrested by digital compression, and the edges of the arterial wound were brought together by a continuous suture of catgut. The bleeding was thus completely arrested. The lumen of the vessel was not apparently diminished. The sutures held firmly, in spite of strong arterial pulsation. The patient made a good recovery, and when last seen—seven months after the operation—was quite free from relapse. The axillary artery could be felt pulsating along the whole extent of the armpit.—*St. Louis Med. and Surg. Journal.*

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Ferru-Cocoa.

This is a novel and ingenious preparation, which cannot fail to become popular as a nutritious and tonic beverage.

In addition to cocoa, it contains appreciable quantities of Kola nut, malt, and iron in an organic and easily assimilable form. According to an analysis made by *The Lancet* in May, 1898, this cocoa contains 0·3 per cent. of iron. The amount of caffein derived from the Kola nut present in Ferru-Cocoa is about the same as that which is generally found in coffee. The malt, of course, helps digestion, while it improves the flavour of the preparation when ready for use.

To make ready for use, a teaspoonful should be blended with a tablespoonful of cold milk Boiling water, sugar, and additional milk should then be added according to taste. In this way a breakfast-cupful of a nourishing, tonic, palatable and refreshing beverage is prepared.

"Ferru-Cocoa" is manufactured by a London Company, whose address is 329 Goswell-road, London, E.C. It is to be had of course from any pharmaceutical or grocery firm when ordered.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*The Duties of the Community with regard to Tuberculosis.*[a] By JOSEPH O'CARROLL, M.D., F.R.C.P.I.; Physician to the Richmond Hospital, and to the Children's Hospital, Dublin; Consulting Physician to the National Hospital for Consumption for Ireland; Examiner in Medicine, Royal University of Ireland.

THE first hope excited by Koch's discovery of the bacillus of tuberculosis was that a method of destroying that organism, or neutralising its mischief, would soon be found. That expectation has not yet been fulfilled, and we have been driven back, for a time at least, to a lower aim—the limitation of the spread of tuberculosis in the community. I cannot present you in my remarks with any novelty, whether of discovery or of exposition; I can only go over ground which has been trod before, with little advantage, perhaps, other than making the path more unmistakable. It may be stated in advance that there is now a perfect agreement that tuberculosis is an infective disease in exactly the same sense that small-pox is infective, the duration of one disease being measured, perhaps, by years, while the other lasts only a few weeks. Further, it attacks animals as well as man, and mainly those animals which are domesticated or used for the food of man. Lastly, it may be introduced into the body by the entrance of any tuberculous (or tubercle-bacilli-bearing) material into any internal part of the body, or through broken or fissured skin.

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[a] Read at the Congress of the Royal Institute of Public Health, held in Dublin in August, 1898, in the Section of Preventive Medicine.

I will not trouble you with a laborious array of statistics. Let it suffice to say that tuberculosis is far and away the most fatal disease which afflicts the human race. From a valuable paper read by Dr. John William Moore before the British Medical Association in 1896, I draw the following comparison of the mortality in the various parts of the United Kingdom. For the fourteen years ending with and including 1894, the ratio of deaths from tuberculosis to the total number of deaths from all causes was:—

In England and Wales -	12·3	per cent.
In Scotland - - -	13·8	do.
In Ireland - - -	14·9	do.

while in the combined districts of North and South Dublin Poor-Law Unions the tuberculosis mortality was 18 per cent. of all deaths, and within the city of Dublin proper the tuberculosis mortality is higher still. But this does not at all adequately represent the extent of the plague. For everyone who dies of tuberculosis there are a large number of the living who are its victims—how many it is impossible to say. In a district like Dublin, where one-fifth of the deaths or more are from that cause, it is probable that at least one-third of the population suffers from it at one time or another. We are accustomed to hear of the group of zymotic diseases as the enemy against which hygiene should concentrate all its forces. No one can deny the great diminution in these diseases brought about by improved sanitary conditions, but there is an even greater enemy yet in the field. From the Report of the Registrar-General for Ireland for the year 1896, I learn that the average yearly mortality in Ireland from zymotic diseases for the decade 1886–95 was 7,997, or practically 8,000, while the average mortality from the commoner tubercular diseases was 11,916, or practically 12,000. Yet this latter total is by no means a complete estimate of the total fatality of tuberculosis; for while the zymotic group includes not merely small-pox, measles, scarlet fever, typhus, whooping-cough, diphtheria, enteric fever, and puerperal fever, but also influenza, a large proportion of the deaths in which are notoriously due to antecedent tuberculosis, simple continued fever which, when fatal, is often only a name for some form of tubercular invasion, and diarrhœa, dysentery, and simple cholera, which are often only tubercular manifestations. So that the probability is that the actual number of deaths due to infective diseases not tubercular ought to stand at much less than 8,000, and the actual number of deaths to be ascribed to the tubercular infection ought to be very much more than 12,000. Within the sanitary area of the city of Dublin proper the excess of deaths due to tuberculosis over those due to the diseases ordinarily included in the zymotic group is relatively much greater, but I cannot give exact figures on account of the very indefinite, if not misleading, classification adopted in the annual report of the sanitary department.[a]

But a further unpleasant fact about tuberculosis has to be faced—namely, that while in England, Wales and Scotland the mortality from tuberculosis, and especially from its commoner manifestation, phthisis, has been steadily diminishing, in Ireland the mortality is increasing. And it is to be remembered that the death-record is not the full measure of the evil of tuberculosis. While the so-called zymotic diseases either "kill or cure," so to speak, within a few weeks, and most other diseases kill either in infancy or towards the close of the natural span of life, tuberculosis claims a large proportion of its victims at the period which should be the prime of life, and after, perhaps, months or years of illness. This is the plague to which, as to the Cretan monster of Grecian fable, we pay tribute yearly in this small country of at least 12,000 lives, and to whose exactions we exhibit a callousness, born of familiarity or of hopeless apathy. Not that we cannot proclaim our enthusiasm for hygienic measures. In the years 1894-5

[a] I think a great deal too much use is made in sanitary reports of the "blessed word of grace," zymotic. It is no great consolation to a man dying of consumption that it is not ordinarily placed in the zymotic group. Why not speak of the group of short infections as opposed to infective diseases of long duration, like tuberculosis and leprosy?

we had an epidemic of small-pox in Ireland. In the whole of Ireland there were 218 deaths, of which 189 were in the Dublin registration district. Practically all these deaths could have been prevented by efficient vaccination. The deaths from phthisis or pulmonary consumption alone, not to speak of the other forms of tuberculosis, in Dublin during those two years reached the total of 2,419, yet the small-pox epidemic begat a proposal for a new hospital for infectious diseases for the city, while not a word was said as to the method of limiting the blood-tax levied by tuberculosis.[a] I quite see that the methods which would be useful in combating the greater plague would have little of the expansive publicity-compelling character entailed by, let us say, two hundred thousand pounds spent on a fever hospital, with an annual subvention of perhaps twenty thousand pounds a year. If half that sum were intelligently spent in fighting tuberculosis the annual mortality in Dublin from that source would not be quarter what it is, and the expenditure would repay itself in the corresponding reduction of the poor rate.

It is practically certain that the bacillus or exciting germ of tuberculosis enters the body either in the food or in the air respired. Of foods, meat and milk are the chief bearers of the bacillus. Tuberculosis is exceedingly common in cattle, and more particularly in cows. The disease varies in the extent of its dissemination in different districts and countries, but a low estimate for dairy cattle would be from 15 to 20 per cent., especially in urban or suburban districts in Ireland where the tuberculosis mortality among human beings is so very great. Yet, when last year Dr. T. P. Kirkpatrick drew attention, in an able paper read before the Dublin University Biological Association, to the danger of a tuberculous milk supply, he was met by an organised outcry to the effect that wherever else there might be cattle-tuberculosis there was certainly none in Dublin.

Now, there is a well-recognised way of finding out whether a given animal is tuberculous or not. If a small quantity of Koch's tuberculin be injected into the animal, and if it harbour within its body any substantial focus of tubercle, it will show a marked rise of temperature within twelve to twenty hours. That test has not been applied to the Dublin cattle, and whenever it is applied it will almost certainly reveal that we are no better off than continental countries, in which the proportion of cattle recognised by this test as tuberculous varies between 30 and 50 per cent., and even more. Tuberculin reaction is a test for living animals; but official inspection by trained observers corroborates its information, for the statistics of abattoirs on the Continent and in England show a percentage of carcases with tuberculosis varying, for example, from 12·7 in Prussia to 27·5 in Saxony, and 29·4 in Manchester.[a]

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[a] The actual number of small-pox cases within the city proper in 1894–5 was 178.

We derive a large portion of our meat supply and the whole of our milk supply from animals which are more liable to the disease than man himself. It has been abundantly proved that tuberculous meat, and especially tuberculous milk, are fruitful sources of the disease in human beings; and infected milk is probably the cause of more than 90 per cent. of the fatal diseases of children under three years of age. As to meat, if not very extensively infected, it may possibly be deprived of all danger by efficient cooking. But in a city where it is almost a boast that the abattoir is boycotted, what guarantee have we as to the extent of the infection which is surely present in a certain number of cases, and what hope for efficient cooking among a population ignorant of any purpose in the process except the satisfaction of the palate? Cattle should be killed in the official abattoir under skilled inspection. When the carcase is found extensively diseased, it should be absolutely condemned; when not too extensively diseased, the parts allowed to be sold for food should be efficiently sterilised before leaving the abattoir. If these measures were put in force, cattle-rearers and dealers would be supplied with the strongest motive for stamping out tubercular disease, and would soon discover the importance of separation of diseased from healthy animals, and of thorough cleanliness in the surroundings of both classes. All measures which deal with the meat supply necessarily improve the milk supply, but there should be extra and very special sanitary inspection of milch cows, dairy-yards, milk-shops, and I will also add of dairy hands. And here I shall venture to say parenthetically, that sanitary officials not specially trained ought to be selected because they are reliable and capable of being trained for the work they have to do, and not because they have failed at every other calling. To return to the milk question I shall add that, even with the fullest inspection, I agree with those who hold that there is no security unless it be efficiently sterilised or, for practical purposes, boiled. Poor and rich cannot have the fact too strongly driven home to them that all milk ought to be cooked before being consumed. It has lately been proved that butter also may carry the tubercle bacillus, and, unfortunately, one cannot sterilise the domestic supply of butter. But butter could, I believe, be just as well made from milk which had been sterilised by being kept for a sufficient time just below boiling point; and the butter of the future must be made with some such precaution. Need I add that if fresh milk be dangerous unboiled, skimmed milk and butter-milk are doubly so, seeing that they are liable to contain a proportionally greater number of the bacilli. Boiling the milk in the first instance would remove suspicion from the milk and its after products, assuming that they were not subjected to new contamination.

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[a] These figures are taken from report in La Semaine Médicale, No. 41, 1898, of Prof. Bang's (of Copenhagen) report to the French Tuberculosis Congress, 1898. It is worthy of remark that the statistics should be so high for Manchester, where a considerable portion of the meat supply is derived directly from Ireland. It can hardly be contended that the cattle develop the disease during the journey.

I now come to the consideration of the danger which man incurs by contact with his fellow who is the victim of tuberculosis. Most frequently phthisis or consumption is the form from which the danger arises, because the consumptive is ever disseminating bacilli about him. At every cough he scatters from his mouth a fine, perhaps imperceptible, rain in which the organisms have been found. His expectoration dries in his handkerchief, on his hands, his lips, his floor, and on the pavements, and is there pulverised and carried on every gust of wind into his neighbour's lungs or into his food. If it does not scatter itself in this somewhat natural fashion, the sanitary scavenger takes care that it shall be disseminated from the rubbish buckets or carts.

Among the poor, who have to live in closer contact with one another than the rich, the danger of direct transference of infection is greatly multiplied.

What does all this lead to? Simply to the deduction that the same measure which I hinted at as necessary for the restriction of tuberculosis among cattle must be applied as far as possible among ourselves. The first of these measures may be briefly described as the improvement of the hygienic condition of the population, and especially of the poor; and this improvement must include attention to their food, their conditions of work, and their housing. Various Factory Acts have much improved the conditions of work. I have indicated at least one direction in which their food can be improved—namely, its sterilisation if suspected of tuberculous contamination; and I shall only say as to the housing that, apart from a few model dwellings in this city, one has only to go through Dublin to discover what the tenements of the poor ought not to be. Insufficiency of light, of air especially, and often of water; a repulsive pretence of sanitary accommodation common to several tenements, stairs and passages and yards grimy or filthy; doors which do not shut and windows which do not open are rather the rule than the exception in Dublin tenement houses. These are ideal conditions for the growth of the tubercle bacilli, and of a race of feeble, unresisting human victims. The ordinary sanitary law, vigorously administered, ought to be able to remedy these conditions.

In the next place, the public should be instructed as to the elementary facts of sanitary science, and I venture to think that in any attempt to introduce practical teaching into our schools there is no subject more useful or important than this. The germ theory of disease, the value of nature's disinfectants—light, air, and water—the elementary facts of drainage are so easily explained, and so important in relation to the life of man, animals, and even the vegetable kingdom, that I can hardly conceive any subject of wider practical bearing.

But to fight the plague of tuberculosis at closer quarters still further measures are necessary. If one had a free hand one would separate at one stroke all those who have the disease from those who have not, and one would use every necessary measure to disinfect the dwellings and surroundings of the tubercular portion of the community. It is easier to recommend these measures than to carry them into effect. The sentiment of family affection, of private liberty, of personal property, will always impede a rigid application of sanitary laws. But such sentiments have been overcome to a large extent with regard to other diseases. A solitary leper found his way to Dublin some few years ago. His personal liberty was so rudely limited as a result of a childish panic that I have often regretted having had any share in making his case public. No doubt leprosy has been eradicated from the greater part of northern Europe, in large part by the application of the principle of separation. I believe we shall have to adopt that principle, perhaps in a modified form, in any vigorous attempt to cope with tuberculosis. We shall have to found in every county, or group of counties, tuberculosis colonies—hospices, where those who are so far advanced in the disease as to be a threatening danger to their neighbours shall be nursed as well as in city hospitals, but in better surroundings of light and air; and we shall require, in addition, consumption sanatoria, where those who have contracted the disease, but are not as yet broken down by it, can undergo a course of treatment by rest and stimulating atmosphere, and good feeding, and such medication as may seem advisable for their cure. I believe that a few consumption hospitals throughout Ireland, like the National Hospital at Newcastle, with which I have the honour to be connected, would work wonders on the consumption death-rate. Not that a few weeks' residence in such an hospital would cure consumption; it can in many cases only put the drag on its down-ward course. But if such hospitals were larger and more generously supported, one could keep the suitable patients longer, or take them in again and again as the disease seemed from time to time to re-assert itself. Consumption hospitals are not a benefit to the patients only; they remove the diseased from the healthy at the periods when infection of the healthy is most likely to occur. But however I should like to see such hospitals multiplied, I confess I think them only half measures till the consumption hospices are also established for the more advanced cases. The sanitary authorities will have to prepare for large outlay in these directions before the next century is many years old.

I now come to a measure which I believe we have no excuse for omitting any longer. I mean the disinfection of the dwellings of tubercular patients. This may be done while in occupation by the diseased person, removed of course for the occasion, or after his death or departure to another dwelling. If the more exacting measure—that is, periodic disinfection during occupation—could be carried out, so much the better; but the second alternative ought under no circumstances to be neglected. The amount of perfectly avoidable consumption or other tubercular disease brought about by allowing healthy people to succeed tubercular ones in tenement dwellings without disinfection is probably much greater than we have any notion of. That the thing occurs is certain; there is hardly a doctor whose experience does not prove it; many such instances have been published of healthy families coming into infected dwellings, and dying off one by one like their predecessors. Is that a right thing to occur in countries which boast their civilisation, and believe that they set the world the pattern in sanitation? I am quite aware that disinfection implies notification; and I should certainly wish to see tuberculosis, or at least consumption, put on the list of notifiable diseases. I do not quite see how otherwise to secure disinfection of dwellings from which consumptives have removed, unless, indeed, it were made obligatory on owners of tenement property to have holdings disinfected at every change of tenant. But there ought to be no difficulty in the case of death, seeing that the Medical Officer of Health for Dublin publishes a report on the deaths within his district weekly. All that is required is that the fact of tuberculosis being a highly contagious disease should not be ignored.

I may recapitulate this paper as follows:—Tuberculosis, including its commonest form, consumption, is a disease due to organic disease germs conveyed into our bodies either in the air we breathe or in the food we eat. The germs which reach us in food occur mainly in the flesh and milk of animals which were themselves diseased. Those which we take in in respiration are borne on the dust formed of the dried expectoration or other secretions of tuberculous persons. To limit the spread of tuberculosis all improvements in the comfort of the population are efficient as raising the standard of resistance to infection, and this particularly holds for improvement of their dwellings. But a special need exists for supervision of their food supply so as to exclude all manifestly infective material from consumption. There ought to be public instruction as to the need of efficient cooking of all food liable to tuberculous contamination. The regulation of the milk and meat supply, whether from home or foreign sources, is especially urgent.

The separation as far as possible of the tubercular from the healthy is desirable, that method being already in use in every other infectious disease which has been the object of sanitary control, and only neglected in this one because of ignorance or apathy. The erection of consumption hospitals is a crying need all over the world, but nowhere more urgent than in Ireland. The disinfection of the dwellings and belongings of consumptives is as urgent as disinfection in the case of any other contagious disease.[a]

Lastly, the sanitary service of the city ought to be organised on the basis of intelligence and efficiency, and on none other.[b]

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[a] I have not thought it necessary to go into the question of disposal or disinfection of expectoration, because that is a matter of detail, and would come under the head of disinfection in general.

[b] I have to acknowledge my indebtedness to the Reports of the Registrar-General for Ireland for much valuable information in connection with this communication.

ART. XIII.—*Ireland: Its Capital and Scenery.*[a] By JOHN WILLIAM MOORE, M.D., Univ. Dubl.; F.R.C.P.I.; Diplomate in State Medicine and Ex-Scholar of Trinity College, Dublin; F.R. Met. Soc.; F.R. Med.-Chir. Soc. Lond.

IN taking the chair at the inaugural meeting of the Section of Chemistry and Meteorology in this great Hygienic Congress, my first duty is to welcome and to thank those who have kindly undertaken to make communications to the Section, or to take part in the discussions which may arise in connection with the topics set down for our consideration.

I have, in the next place, to express my grateful sense of the honour which has been conferred upon me in asking me to preside over this Section. It is an honour of which anyone might well be proud, and I am deeply sensible of the high compliment it implies.

Yet I approach my task with some misgiving, for, even if a long apprenticeship as a practical meteorologist may seem to bestow upon me some slight claim to the chair in a Section of Meteorology, I can in no way be regarded as an authority in the domain of the more precise and erudite science of Chemistry. It is, however, no small encouragement to reflect that in the list of Vice-Presidents of the Section are found names of the highest rank in the walks of chemical science. In the lustre then of the brilliant reputation of my colleagues I am content to lose my own feeble shining, even as

> "The glow-worm shows the matin to be near,
> And 'gins to pale his ineffectual fire."

In seeking for a topic for an opening Address, it occurred to me that some account of the climatology of the city and scenery of the country in which we meet would be appropriate to the occasion.

DUBLIN, the metropolis of Ireland, stands at the extreme western end of the beautiful Bay of Dublin, close to the mouth of the River Anna Liffey, along both north and south banks of which the city extends for a distance of some 2 miles. It is 292 miles in a direct line W.N.W. of London, 138 miles W. of Liverpool, and 69 miles W. of Holyhead, and is situated in latitude 53° 20′ N., longitude 6°17′ W. It comprises an area with the municipal boundary of 3,733 acres, containing, in 1891, 25,764 inhabited houses and a population of 245,001. But these figures by no means represent what may be called "Greater Dublin," or the Dublin Registration District. This consists not only of the city proper but also of the populous suburban districts of Rathmines, Donnybrook, Blackrock, Kingstown, Clontarf, Howth, Coolock, Drumcondra, Finglas, Glasnevin, and Palmerston. The population of this "Greater Dublin" was, in 1891, 349,594; and its extent is 24,693 statute acres.

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[a] Being an Address delivered before the Section of Chemistry and Meteorology at the Congress of the Royal Institute of Public Health, held in Dublin, August 18 to 23, 1898.

The origin of the city is lost in the mists of antiquity. The Greek geographer Ptolemy, writing A.D. 140, speaks of a small tribe, the Eblani, as having established themselves at Eblana ("Civitas Eblana"), which was probably the site of Dublin. The dark peat-stained waters of the Anna Liffey gave its present name to the Irish capital, for the Celtic *Duibhlinn* signifies the "black pool." Among the Irish-speaking population of the west of Ireland, Dublin retains its antient name of Ath-Cliath, or more fully Bally-ath-cliath, the Celtic *Baile-atha-cliath* meaning the "town of the ford of the hurdles." From this name the obvious inference is that a wickerwork causeway stretched across the Liffey, and that in its vicinity the town sprang into existence.

The site of Dublin was originally not only beside a pool of dark water (*Duibhlinn*) but in a swamp, for the prefix "Anna" in the name *Anna Liffey* signifies literally a watery place, a marsh or swamp, annagh (*eanach*) being derived from *ean*, water. It is this untoward circumstance, perhaps, which in modern times has gained for Dublin so evil a reputation for the endemic prevalence of typhoid fever, and for a susceptibility in summer and autumn to diarrhœal—or, as they are well termed, "filth"-diseases. In 1888, Dr. T. W. Grimshaw, C.B., Registrar-General for Ireland, in conjunction with Sir Charles A. Cameron, Medical Superintendent Officer of Health for the City of Dublin, read before the State Medicine Section of the Royal Academy of Medicine in Ireland a paper on the distribution of enteric fever in this city. The authors found that the fever was particularly prevalent in districts situated on pervious strata of the soil and subsoil. The rate of prevalence of enteric fever among the residents on the pervious strata was 6·82 per 10,000 per annum, while on the impervious strata it was only 4·6. One death from enteric fever occurred in every 365 inhabitants residing on the pervious strata, but one such death only in every 531 inhabitants dwelling above the impervious strata.

The pervious stratum consists of a sand and gravel bed formed by an old raised sea-beach, which occupies the centre of the city along both sides of the River Liffey, into which all the city sewage has hitherto been discharged. This gravel bed rests on clay and rock, so that it retains all the fluid filth cast upon it, or which has soaked into it from the river. At the time of writing, a costly and extensive system of main drainage is in process of construction. By this the gravel bed will be effectively drained, with, no doubt, a highly beneficial effect upon the health of the city, especially in respect to the prevalence of, and fatality from, "filth-diseases."

Dublin is a handsome, and in parts a picturesque city. Many of the public buildings can lay claim to considerable architectural beauty, the principal thoroughfares are broad and straight, with the exception of Grafton-street, which is far too narrow for the great stream of life and bustle which flows through it for many hours each working day. The city is well supplied with "lungs" in the splendid squares on both north and south sides of the intersecting river. One of the largest of these open spaces is the ancient and far-famed University of Dublin with its quadrangles and far-stretching gardens and College Park. The grave defect, which does much to neutralise the beneficial effect of the situation and surroundings of the capital upon public health, is the housing of the poorer classes. The residential houses in the older parts of the city, especially in the Coombe district and the "Liberties," have long since been broken up into tenements. These are the dwelling-places of a large proportion of the poorer inhabitants, and so have come to play a ghastly part in the "bills of mortality" for generations. From their structure, age, and insanitary state these tenement houses are unwholesome to the last degree, and all sanitary reformers agree that the housing of the poor is one of the most pressing questions of the day in Dublin.

Much has been done of late years to abate the crying evil of the Dublin tenement houses—witness the splendid work of the Dublin Artisans' Dwellings Company, of the Corporation of Dublin, and last, not least, of the Guinness Trust, which has given living expression to the philanthropy and princely munificence of the Right Hon. Lord Iveagh, K.P. A further movement is on foot at present to provide sanitary accommodation on very reasonable terms for even the very poor among the industrious and sober classes of the population.

From a hygienic standpoint, the meteorological factors of greatest importance in determining the climate of a given town or place are—(1) Mean Temperature, (2) Extremes of Temperature, (3) Rainfall, (4) Rainy Days, and (5) Relative Humidity. Of somewhat less importance are—(6) Mean Atmospheric Pressure, (7) Amount of Cloud, (8) Direction and Force of the Wind.

Mean Temperatures.—Dr. Alexander Buchan has calculated the mean monthly and annual temperature of the City of Dublin on a mean of forty years, from January, 1856, to December, 1895. His results are as follows:—

January = 41·1°
February = 42·0°
March = 43·3°
April = 47·3°
May = 52·3°
June = 57·5°
July = 60·3°
August = 59·4°
September = 55·6°
October = 49·4°
November = 44·5°
December = 41·6°

Year = 49·5°.

Extreme Temperatures.—Since January, 1865, the extreme readings of the thermometer in Stevenson's stand recorded in Dublin have been 87·2° on July 15, 1876, and 13·3° on December 14, 1882—a range of 73·9° Fahr. But these values are very exceptional. The average annual range of mean temperature is not quite 20°—viz., January, 41·1°; July, 60·3°—that is, 19·2° F.

Rainfall.—In the "Rainfall Tables of the British Islands, 1866–1890," published by the authority of the Meteorological Council in 1897, the mean rainfall at Fitzwilliam-square, Dublin, is given for the 20 years, 1871–1890, as follows:—

	Inches		Inches.
January	= 2·09	July	= 2·63
February	= 2·22	August	= 2·91
March	= 1·97	September	= 2·23
April	= 2·16	October	= 3·18
May	= 1·89	November	= 2·70
June	= 1·98	December	= 2·35

Total for the year = 28·31 inches.

The "rainfall" is the measurement at 9 a.m. each day, and is entered to the day preceding, to which 15 of the previous 24 hours belong. A "rainy day" is one on which at least five thousandths (·005) of an inch falls within the 24 hours from 9 a.m. to 9 a.m. In the twenty years, 1865 to 1884, the average monthly and yearly number of rainy days in Dublin was—

January	= 17·1	July	= 17·6
February	= 17·6	August	= 15·5
March	= 16·5	September	= 14·5
April	= 15·0	October	= 17·2
May	= 15·1	November	= 16·8
June	= 14·7	December	= 17·0

Total for the year = 194·6.

Borrowing the language of the agriculturist we may roughly regard the first quarter of the year (January–March) as "Seed-time," the second quarter (April–June) as "Growing-time," the third quarter (July–September) as "Ripening and Harvest-time," and the fourth quarter (October–December) as "Fallow-time." We find then that the average precipitation in "Seed-time" amounts to 6·28 inches, distributed over 51·2 days; that in "Growing-time" is 6·03 inches, on 44·8 days; that in "Ripening-time" is 7·77 inches, on 47·6 days; and that in "Fallow-time" is 8·23 inches, on 51·0 days, February, 1891, was the driest month on record in Dublin. There were only 2 rainy days during the whole month, and the rainfall was but ·042 inch. September, 1865, also, had only 3 rainy days with a rainfall of only ·056 inch. The mean temperature of the latter month was 61·4°, or 5·8° above the average (55·6°) for September.

On the other hand, December, 1876, had a rainfall of 7·566 inches on 22 days. In October, 1880, also, 7·358 inches of rain fell, on, however, but 15 days—the precipitation on the 27th alone was nearly *two and three-quarter inches* (2·736). In July of the same year, 6·087 inches of rain fell on 24 days. In November, 1888, the rainfall was 6·549 inches on 26 days. The *wettest* month—that is, the month in which there were most rainy days—was July, 1871, when 4·391 inches fell on no less than 28 days.

An inch of rain—equivalent to a downpour of 101 tons of water on every statute acre—seldom falls within 24 hours in Dublin. On October 27, 1880, however, the measurement was 2·736 inches; on August 13, 1874, also, 2·482 inches of rain were registered; and on May 28, 1892, 2·056 inches were recorded.

The comparatively small precipitation in and near Dublin clearly depends on the geographical surroundings of the Irish capital—its situation in the east of the island, and the grouping of high lands to the S.E., S., and S.W., whereby the rainbearing winds are drained of their superabundant moisture before they reach the valley of the Liffey and the plains lying north of that river.

Relative Humidity.—By this term is meant the percentage of saturation of the atmosphere with aqueous vapour. The relative humidity of absolutely dry air is 0, that of saturated air, when dew is deposited or fog forms, is 100. In Dublin the *mean relative* humidity in the twenty years, 1871–1890, was 82·5 per cent. (81·2 per cent. at 9 a.m. and 83·8 per cent. at 9 p.m.). It is highest on an average in December (86·7 per cent.) and lowest in May (76·2 per cent.)—this latter being the month when temperature is rising most quickly, and when, therefore, the capacity of the air for aqueous vapour is at a maximum.

Mean Atmospheric Pressure.—Dr. Alexander Buchan calculates the mean monthly and yearly atmospheric pressure, reduced to 32° and mean sea level, in the City of Dublin during the 40 years—1856 to 1895 inclusive—to be—

	Inches		Inches
January	= 29·870	July	= 29·931
February	= 29·923	August	= 29·903
March	= 29·885	September	= 29·919
April	= 29·914	October	= 29·867
May	= 29·956	November	= 29·876
June	= 29·981	December	= 29·887

Annual Mean = 29·909 inches.

From this Table it appears that the monthly mean pressure rises to 29·981 inches in June, and falls to 29·867 inches in October. I may state that the absolute extreme readings of the barometer, at any time taken by me were—maximum, 31·020 inches, at 10 a.m. of January 9, 1896; minimum, 27·758 inches at 2 30 p.m. of December 8, 1886. These readings assuredly represent the extreme range of atmospheric pressure, reduced to sea-level, in Dublin—namely, 3·262 inches, rather more than 3¼ inches.

Amount of Cloud.—This climatological element varied in the 20 years, 1871–1890, from 64·5 per cent. at 9 a.m. to 56·5 per cent. at 9 p.m., the mean being 60·5 per cent. February is the most cloudy month (67 per cent.), May is the least so (55 per cent.). The clearness of the sky at 9 p.m. in May is a striking characteristic of the meteorology of that month.

Direction of the Wind.—As regards this element, 14,613 observations were made during the 20 years, 1871–1890, with this result—N., 870; N.E., 941; E., 1,409; S.E., 1,267; S., 1,323; S.W., 2,051; W., 4,030; N.W., 1,750; calm, 972.

The preponderance of westerly (S.W. to N.W.) over easterly (N.E. to S.E.) winds is very striking; the figures are 7,831 and 3,617 respectively, more than two to one in favour of westerly winds. But the great excess of due W. winds is still more remarkable. They number 4,030, or nearly double the number of S.W. winds, 2,051. Partial deflection of S.W. winds by a range of mountains with summits of 2,000 feet and upwards, to the southward of the city, in some measure accounts for this; and a further explanation is to be found in the frequent occurrence of light westerly land breezes during calm, cold weather in winter. Correlated to this class of westerly winds are the light easterly and south-easterly sea-breezes of the day-time which so materially modify the heats of summer in Dublin, and go so far to swell the number of E. and S.E. winds included in the table.

Gales were recorded on 413 occasions at 9 a.m. or 9 p.m. within the twenty years. Of these 171, or considerably more than one-third, happened within the first quarter of the year, only 38 in the second, 56 in the third. and 148 in the fourth. January (with 74 gales) was the stormiest month. There were only 4 gales in June.

Thunderstorms occurred on 176 days, of which 13 were in the first quarter, 62 in the second, 78 in the third, and 23 in the fourth. June (with 34 storms) and July (with 50) were the months in which electrical disturbances most frequently took place. Only one thunderstorm occurred in December during the twenty years.

There were 408 days upon which *snow* or *sleet* was noted. Of these 258 fell in the first quarter, 36 in the second, none in the third, and 114 in the fourth. Of 622 days on which *hail* was recorded, 255 were found in the first quarter, 160 in the second, 40 in the third, and 167 in the fourth. The relative frequency of hail in the warmer months is noteworthy.

The climate of Dublin is, in the fullest sense, an *insular* one, free from extremes of heat and cold—except on very rare occasions—and characterised by a moderate rainfall (about 28 inches) annually, which is distributed, however, over a large number of days (about 195 in each year). Clouded skies, a high degree of humidity, and a prevalence of brisk winds—chiefly from westerly points of the compass—make up the climatology of the Irish capital.

In common with the rest of the British Islands, Dublin owes its mild equable climate in great measure to the proximity of the North Atlantic Ocean and its surface current of warm water, usually called "The Gulf Stream," because its head-springs arise in the Gulf of Mexico. This sets in a north-easterly direction, laving in its course the western shores of Europe, and carries even into the Arctic Regions north of Scandinavia temperatures from 20° to 30° above those due to the latitude alone.

Another obvious cause of the mildness of the climate is the overwhelming prevalence of south-westerly and westerly winds, which are both warm and moist. These winds have been shown to form part of a cyclonic circulation round a large area of low atmospheric pressure, the centre of which in winter lies not far from Iceland over the North Atlantic. Only in spring do these periodic winds give place to northerly and easterly breezes.

But local natural advantages as regards situation exercise a further beneficial effect on the climate of Dublin. A few miles S. of the city lies a range of mountains, with summits varying in height from 1,000 to more than 2,500 feet. This mountain chain intercepts the vapour-laden winds at all points between S.S.E. and S.W., and so the rainfall is diminished and the sky is comparatively cleared during the continuance of the southerly and south-westerly winds, which so frequently prevail. The absence of any very high ground to the northward of the city—with the exception of the Hill of Howth, which rises, however, only to 563 feet—also prevents excessive precipitation with S.W. winds. It is true that with easterly (S.E. to N.E. or N.) winds the precipitation (often in the form of hail, and in winter of sleet or snow) in and about Dublin exceeds that which occurs at such a time inland or on the Atlantic coasts. Were it not for this "lee-shore" condensation the Dublin rainfall would be considerably smaller even than it is.

The second local feature which ameliorates the climate of the capital is the proximity of the sea to the eastward of the city. The keen, dry, searching easterly winds of winter and spring are much softened in their passage across the Irish Sea, so that during their prevalence the thermometer occasionally stands some 5° or upwards higher in Dublin than it does at Holyhead, although this latter place is actually on the sea. It is true that the converse holds good during westerly and north-westerly winds, when severe frost sometimes occurs in winter in Dublin, while the thermometer remains decidedly above the freezing point at Holyhead. Yet these latter winds are never so piercingly cold and parching as those from easterly points. Nor is it in winter merely that the Irish Sea confers a benefit upon Dublin. In calm, clear weather in summer time, no sooner has the sun mounted high in the heavens than a cool, refreshing sea-breeze—a typical "inbat,"[a] as the modern Greeks call it—sets in towards the land, so that consequently extreme or oppressive heat is rarely experienced. Indeed, an oppressive atmosphere happens only when a damp, warm S.W. wind is blowing, with a more or less clouded sky. Temperatures above 80° in the screen in Dublin nearly always coincide with winds off the land, from some point between S. and W., and a clear or only slightly clouded sky.

Among climatic epiphenomena, the infrequency of thunderstorms and the relative frequency of hail-showers in Dublin are worthy of note. In winter fog and frost often prevail in the city, when a northerly breeze is blowing along the coast, accompanied with a higher temperature, and perhaps showers of rain. Lastly, in summer, with a westerly wind, heavy planetary showers fall at times in the valley of the Liffey, while the neighbouring higher lands enjoy dry weather.

This may or may not be a suitable occasion on which to direct attention to a much-needed reform in the keeping of time in Ireland. For many years the time-standard in this country has been so-called "railway-time," more strictly Dublin time, or rather the time of the meridian of Dunsink Observatory, Co. Dublin. It is, however, a matter for consideration whether Greenwich time should not be adopted as the standard for Ireland, as it already is for Great Britain. If an objection is raised that a national question is involved, it is only necessary to point to Scotland and Wales, where the national sentiment runs as high as it does in Ireland, and which have long since adopted Greenwich time. As a matter of fact, however, the question is that of West European time, which is applicable to a zone extending 7½ degrees of longitude both east and west of the Greenwich meridian. France has lately adopted this time, just as

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[a] Evidently a derivation from *ἐμβαίνω*.

Switzerland and Germany have arranged to set their watches by Central European time, which extends from 7°30′ E. long. to 22° 30′ E. long.

For many years Greenwich time has been adopted in the Postal Department, and Irish telegrams are despatched and received by it. As a matter of public convenience, the principle should be extended, and so the existing confusion in time-tables and in telephonic communication between Great Britain and Ireland would cease. Let the secretaries of the various steamboat and railway companies agree upon so desirable a reform, and the thing is done. It would, however, be necessary afterwards to amend the Statutes (Definition of Time) Act, 1880, which provides that whenever any expression of time occurs in any Act of Parliament or other legal instrument, it shall be held in Great Britain to be Greenwich Mean Time, and in the case of Ireland, Dublin Mean Time.

I may not close this Address without a few words in praise of the natural beauties of the land in which we meet, in which many of us dwell, and which we love so dearly.

Ireland is, in truth, a land of poetry and romance. Enshrined in the name of every hill and glen, of the mountain brook or the flowing river, of the moorland or the wave-washed crag, even of the busy town, is some poetic thought (of deep pathos) or germ of legendary lore. Within a few miles of the capital itself we meet with Ben Edar, the ancient name of Howth; the Phœnix Park, where Phœnix is a corruption of the Irish *Fion-uisge*, the "fair water;" Bohernabreena, the "road of the mansion;" Glen-na-Smoel, the "valley of the thrush;" Glendoo, the "black glen;" Dargle, the "valley of oaks." Enniskerry is the representative of *Ath-na-scairbhe* [Anascarry], "the ford of the scairbh" [scarriv] or "rough river-crossing." Shankill is the Irish *seincheall*, "old church" [Latin: *senex*]. Killiney is "the church of Lenin's daughters," *Cill-Inghen-Leinin.*

Nor are traces of the Danish dominion wanting in the nomenclature of places in and near the capital. Oxmantown, a district of the city north of the river, was originally Ostmanby, that is, the "town of the eastmen" [*i.e.*, Danes]. Howth is the Danish *Hoved*, "a head." Lambay is "Lambisland" (*ei*, *ey*, or *oe* being Norse for island) [*Cf.* Faræ]. Ireland's Eye is a mis-translation into Danish of the Irish *Inis-Ereann*, that is, Eria's island—Eria having been a lady of the olden time, not *Eire*, Ireland. Leixlip is wholly Danish, old Norse *Lax-hlaup—i.e.*, Salmon-leap. Dalkey means "thorn-island" in Danish, the more ancient Irish name being Delginis, from *delg*, "a thorn," and *inis*, "island."

Anyone who wishes to pursue this subject will find the fullest information in a learned work on the "Origin and History of Irish Names of Places," by P. W. Joyce, LL.D., Univ. Dubl., M.R.I.A. To this fascinating work I am indebted for most of the foregoing derivations.

The Celtic *cúm* [coom], a hollow, is reproduced in the name of one of the oldest parts of Dublin, the Coombe, which is in reality the hollow or valley of the Poddle-river, a tributary of the Liffey on the south, just as the Bradoge is on the north. This word means "little gorge," and is the name of a little stream which flows by Grangegorman and reaches the Liffey not far from the Four Courts on the northern line of quays.

In the spring of the present year it was my happiness, accompanied by my wife, to travel through the south and south-west of Ireland, from Waterford to Lahinch and Lisdoonvarna, in Co. Clare. The most ample facilities for transit by rail, and road, and water now exist, and the serious hindrance to travel which inadequate and uncomfortable hotel accommodation presented in bygone days is fast being removed. The Southern Hotels in Kerry and the Golf-Links Hotel at Lahinch, on Liscannor Bay in Clare, leave nothing to be desired in respect to site, accommodation, and moderation in charges.

I cannot do better than briefly describe our route, which was skilfully mapped out for us by Mr. Robert G. Colhoun, the courteous and able officer of the Great Southern and Western Railway Company.

Travelling over the Great Southern and Western and Waterford and Central Ireland and Kilkenny Junction Railways from Kingsbridge to Waterford, we visited that ancient city which is still called the "Urbs Intacta." A splendid waterway, formed by the confluence of three fine rivers—the

Suir, the Nore, and the Barrow—leads from Waterford to the sea. Opposite to the low spit of land which terminates at Hook Head nestles the charming little watering-place of Dunmore East. It may be reached by steamer from Waterford, or by road from Tramore.

This latter place stands on a steep declivity at the western extremity of Tramore Bay. Along the sea-front stretches for some three miles the famous "silver strand." Tramore is connected with Waterford by a railway about 9 miles in length.

From Waterford we travelled to Lismore by the Waterford, Dungarvan, and Lismore Railway. The line is throughout most picturesque. At first it runs along the southern bank of the River Suir. It then passes through and indeed over the foot hills of the Commeragh Mountains, which rise to 2,500 feet some 5 miles N.W. of Kilmacthomas. From this place the line descends rapidly to Dungarvan, prettily situated on the shores of Dungarvan Harbour, which is bounded on the S. by the bold promontory of Kelvick Head. Nothing can surpass the beauty of Lismore and the whole valley of the Blackwater. North of the valley and facing Lismore Castle, the lordly mansion of the Duke of Devonshire, are the Knockmealdown Mountains culminating in a peak 2,609 feet high—the "Hill of a Thousand Hills," for such is the meaning of "Knockmealdown." From Lismore to Youghal there are two routes—to Cappoquin by rail or road, and thence by river steamer, or by road direct. Both routes are beautiful.

Youghal is a quaint old place, celebrated as the home of Sir Walter Raleigh. From it the Great Southern and Western Railway carries the traveller to Cork. The many attractions of this city, the capital of Munster, and of its neighbourhood, are too well known to need description. The beauty of Queenstown and of Cork Harbour is proverbial.

The Cork, Bandon, and South Coast Railway carried us from Cork to Bantry, passing Bandon on the way. The railway descends to the sea level at Bantry by a steep incline, from which lovely views of Bantry Bay are obtained. The drive of eleven miles from the town of Bantry to Glengarriff is along the shores of the Bay for the most part. It is tame when compared with the magnificent drive from Glengarriff to Kenmare. The road, which is a wonderful piece of engineering, ascends to more than 1,000 feet above the sea. From this height one looks upon Bantry Bay, with its countless islands, its wooded shores, and its overhanging mountains. Kenmare may also be reached by rail from Headford Junction, on the Great Southern and Western line from Mallow to Killarney and Tralee.

The scenery of the Kenmare River, as the great fjord is called which extends 30 miles from the "Head of the Sea" (for such is the meaning of the name "Kenmare") to the Atlantic Ocean, is rarely equalled—never surpassed. The drive by coach to Parknasilla, and thence by Sneem, Derrynane, and Waterville, to Cahirciveen, is delightful in fine weather. The eyes are literally feasted with the ever-changing panorama of hill and valley, woodland, moor, sea, and island. The least interesting part of this coach-drive of 46½ miles is the stage between Waterville and Cahirciveen, but this is likely soon to be bridged over by an extension of the Great Southern and Western Railway. The Cahirciveen branch of this great system runs down to Valentia Harbour, whence the traveller crosses to Valentia Island by ferry boat. The views of and from Valentia are strikingly beautiful. In order to see everything to advantage, a car should be chartered at Knightstown, the chief town in the island. There is much of interest to be seen. Glenleam, the demesne of Sir Maurice Fitzgerald, the Knight of Kerry, the wonderful slate quarries and the caves which have been formed therein, Bray Head and its beetling cliffs overhanging the majestic Atlantic, and the beautifully-named village of Clynacartan on the southern sound—are all well worth a visit. The offices of the Transatlantic Telegraph Company at Knightstown should also be inspected.

From Cahirciveen the visitor is carried back by rail to either Tralee or Killarney. The route is extremely picturesque. After leaving Cahirciveen the line rises several hundred feet to a mountain station called Kells—on one side stands Knocknadob, 2,266 feet; on the other, Coomacarrea, 2,542 feet. A steep incline thence carries the line on to the southern shore of Dingle Bay, another of the Kerry fjords.

The train passes through the beautiful valley of Glenbeigh and skirts Caragh Lake, from which there is a magnificent view of Carran Tual, the highest mountain in Ireland (3,414 feet), and the precipitous range of the M'Gillicuddy's Reeks.

From Tralee we travelled to Limerick *via* Listowel and Newcastle by the Waterford and Limerick and Western Railway. At Listowel one of the most curious railways in existence has its terminus. The line runs to Ballybunion at the mouth of the Shannon. It is constructed on the Lartigue principle of a single elevated rail.

Limerick, the "City of the Violated Treaty," presents many features of interest to the visitor—King John's Castle, St. Mary's Cathedral, the Treaty Stone, and, above all, the broad waters of the Shannon. From the city there are two routes to the coast of Clare and its watering-places. One is by water, a steamer leaving almost daily for Kilrush, which is nine miles by rail from Kilkee. The other route is by rail to Ennis, and thence by the narrow-gauge West Clare Railway to Lahinch, Miltown Malbay, and Kilkee. The last-named favourite seaside resort is very bracing—the neighbouring cliffs are famed for their grandeur, and the sea-bathing is excellent. Lahinch stands near the S.W. extremity of Liscannor Bay. It is noted for its golf-links, and in connection with these, the Golf-Links Hotel is all that can be desired in respect of site, equipment, and cuisine.

From Lahinch a most enjoyable drive is by Liscannor to the stupendous Cliffs of Moher, which tower to a height of 600 feet above the Atlantic, and thence to Lisdoonvarna, famous for its sulphur and chalybeate springs. Splendid views of the Arran Islands, Galway Bay, and the mountain ranges of Galway and Connemara are commanded by the road running from the Cliffs of Moher to Lisdoonvarna. The drive may fitly end at Ennistymon, where there is a fine cascade on the Inagh River. It is a station on the West Clare Railway, so that the return journey to Dublin is easy *viâ* Ennis, Limerick, and Limerick Junction to Kingsbridge, or *viâ* Ennis and Athenry to Broadstone, Dublin, over the Waterford and Limerick and Western Railway, and the Midland Great Western Railway.

In a delightful little book but lately published, and well-named "The Sunny Side of Ireland," the author, Mr. John O'Mahony, thus describes the beautiful country the traveller passes through over the system of the Great Southern and Western Railway:—

"A beautiful country it truly is, be it approached from Athlone, its north-western gate, by the Shannon, where

> "'In the quiet watered land, the land of roses,
> Stands Saint Keiran's city fair,'

or from its south-western side, in the kingdom of Kerry, where the ocean leans against the mountains, and the storm-swept peak of Skellig Michael makes the most westerly citadel of Christ in the Old World! Everywhere within its broad borders, swift-rushing rivers, mirror-like lakes, and mountains tiaraed in the skies, delight the vision and gladden the heart."

Through the north-west, north, and north-east of Ireland, equally attractive tours are possible. That which I have attempted briefly to describe occupied exactly ten days. It was health-giving, enjoyable, and instructive, and impressed us with the wealth of scenic beauty which lies at our very doors—alas! too much neglected in the past.

May I express a patriotic hope that the dawn of a happier day for our dear native land is already breaking, for

> "—— Look, the morn, in russet mantle clad,
> Walks o'er the dew of yon high eastern hill"—

and that soon the tide of popular favour will bear many a visitor to our emerald shores!

APHASIA IN A LEFT-HANDED WOMAN.

S. Monrad, of Copenhagen, describes in the *Hospitals-Tidende*, No. 29, 1895, the case of a woman, aged 63 years, in whom an apoplectic fit had produced paralysis of the left facial nerve, paresis of the left extremities, and homonymous left-sided hemianopsia. She was unable to speak and to write a number of words, and often used the wrong words for many things. Complete recovery took place in eight weeks. The history of the patient revealed the fact that she began to be left-handed when nine years of age, being obliged to wear the right arm in a bandage about ten months, and since that time she has principally used the left hand.—*St. Louis Med. and Surg. Journal.*

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science by leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. New York City. Volume XIII. London: Sampson Low, Marston & Co. 1898. 8vo. Pp. 600.

THIS volume still maintains the ambitious character which designated its conception by the minute manner in which the various contributors have elaborated their special subjects.

The six hundred pages comprising the volume are devoted to the following articles:—"Ptomaïns, Toxins, and Leucomaïns," by Victor C. Vaughan, Mich.; "Infection and Immunity," by Harold C. Ernst, Boston; "Water-Borne Diseases," by Ernest Hart and Solomon C. Smith, London; "The Duration of the Periods of Incubation and Infectiousness in Acute Specific Diseases," by Dawson Williams, London; "Small-pox," by John William Moore, Dublin; "Vaccina," by P. Brouardel, Paris; "Mumps," by Jules Comby, Paris.

Vaughan's article occupies the pride of place, and right well it deserves it, if we base our standard of excellence on having placed before us what is up to date. Ten years ago the text-books contained a few paragraphs only on the subject of Ptomaïns; to-day we are almost staggered with the advancing strides of pathological chemistry in finding that 57 distinct "organic chemical compounds, basic in character and formed by the action of bacteria or nitrogenous matter," have been placed in the category of ptomaïns. These substances are now known to be not the most important or characteristic products of bacterial action.

Toxins, which were almost unheard of a decade ago, have now sprung into importance and receive the attention which is their due.

In addition to these, Leucomaïns of the different groups have been attracting considerable attention, and the present position of our knowledge regarding them is set forth in the article under attention. It is doubtful whether the ordinary reader will be interested in the enumeration of the names, the chemical formulæ and the attributes of the numerous ptomaïns, but it is certain that the subject of meat poisoning will be read with universal interest.

That Dr. Vaughan has introduced a list of more or less new classical terms is scarcely to be wondered at, but for the general reader "milk poisoning" will, we imagine, be always more acceptable than "Galactotoxismus." At any rate the reader with a leaning towards ancient Greek will be gratified to find that the classical vocabulary is etymologically correct.

Ernst, in his article on "Infection and Immunity," presents the subject under two heads—first, the experiments leading to our present ideas upon infection, and the methods by which it may occur; second, the consideration of immunity, (*a*) natural, and (*b*) acquired.

In the chapters dealing with modes of infection, special mention may be made of "Fœtal Infection," "Infection through the Intestinal Tract," while further on "Predisposition to Infectious Diseases" is discussed at much length, but "Mixed Infection" is too large a subject to be well treated as part of a general article.

Coming to Immunity, a brief review is given of the different intricate theories that have been advanced to explain the phenomena by which natural or acquired resistance is exhibited towards certain diseases, and the conclusion arrived at reads as follows:—"The only plausible theory of immunity is that which explains it by the disinfecting properties of the humors, by the special antisepsis of the animal, by the defensive proteids. Any complete explanation must take into account the three properties of these defensive proteids—their bactericidal, attenuating, and antitoxic action." These various properties are noted by the author, who then passes on to "Serum Treatment in the Experimental Diseases," and "Serum Treatment in Human Disease." There are few laboratory workers who have experimented in this branch of medical science whose names are not found in these pages.

"Water-Borne Diseases" is a smaller subject than the preceding ones, and as the ordinary reader is carried over better-known ground, his mind requires less concentration, and at the same time he sighs with relief at the comparative absence of the ever-recurring surnames.

The authors have naturally divided the various forms of disease-producing contamination to which water is subject into *living* and *non-living*, and after these are dealt with in careful and readable fashion, a chapter is added on "Preventive Measures."

To Dr. Dawson Williams has been allotted the task, for which he was well qualified by previous experience, of writing on "Incubation and Infectiousness in Acute Specific Diseases." The subject-matter of this article falls more readily perhaps within the scope of the specialists who have been entrusted to deal with the various specific diseases, but for a general survey of the particular points which form the basis of this article, we can safely pronounce it to be excellent.

"Small-pox" has received important recognition, and occupies over 100 pages of the volume. The author, whose work on the "Eruptive and Continued Fevers" holds a high position in medical literature, has certainly spared himself no trouble in his efforts to make this article up to date and instructive, and his wide knowledge of ancient and modern languages is evident on every page. The information to be derived from a perusal of this scholarly article may be relied on as trustworthy, and indeed, if we might venture to find fault with so able a composition, it would be to demur that few statements are made to which an authority is not appended as hall-marks of their respective values. In fact, there are 73 distinct bibliographical references enumerated.

Brouardel writes on "Vaccina," and the article well deserves its place in this volume. He proves conclusively that re-vaccination should be made compulsory, and furthermore, although he does not contend that lymph unmixed with blood when taken from a syphilitic subject will transmit that disease to a healthy person, still the fact that syphilis can be transmitted by vaccination has been proved so conclusively that the author would avoid all chances of infection by using only pure animal vaccine.

"Mumps" comes in at the end of the volume, and receives great respect at the hands of Comby. There is little doubt but that for the occasional occurrence of orchitis, followed at times with atrophy of the testicle, this disease would not be looked upon with so much attention, and indeed close on 50 pages seems more than ample space to devote to a rather trivial ailment. But nothing is trivial in medicine.

Dwelling-Houses: their Sanitary Construction and Arrangements. By W. H. CORFIELD, M.A., M.D. Oxon., F.R.C.P. Lond.; Professor of Hygiene and Public Health in University College, London, &c. Fourth Edition, with Illustrations. London: H. K. Lewis. 1898. 8vo. Pp. 125.

OF this new edition of a well-known and useful little book we have nothing but good to say. The amount of sound information which the author has contrived to embody within its modest dimensions is the most surprising feature in the work. In successive chapters the situation and construction of houses, ventilation, warming and lighting, water supply, removal of refuse, sewerage, water-closets, sinks and baths, with their fittings and traps, all receive close attention at the author's hands.

The great charm about the book is the simplicity of the diction, which brings its teaching within the mental capacity of all classes of readers. To give only one example. At page 18 the following passage occurs:—"When the wind blows over the top of a chimney, or over a ventilating pipe, it causes a diminution of pressure in the column of air in the chimney or ventilator, and so produces an up-current, upon precisely the same principle that little bottles made for distributing scent about apartments act."

There are very few points which call for criticism. The following statement on page 2 needs qualification:—"The eastern coast [of Great Britain] which is swept by winds that have passed across Siberia and Russia, and have only the narrow strip of German Ocean to pass over before they reach our coast, has a dry, bleak, and comparatively cold climate." Very rarely, indeed, does it happen that an east wind reaches

Great Britain from Russia, much less from Siberia. Much more commonly an east wind is merely part of an anticyclonic circulation round an area of high barometric pressure lying over the Norwegian Sea and Scandinavia.

The etymology of window given on page 19—"wind-door"—was new to us. "Grundwasser" on page 3 should begin, like all German nouns, with a capital G.

We heartily recommend Dr. Corfield's excellent little book.

Yellow Fever in the West Indies. By IZETT ANDERSON, M.D. Edin.; Principal Medical Officer of the Public Hospital; Surgeon to the General Penitentiary, &c., Kingston, Jamaica. London: H. K. Lewis. 1898. Pp. 106.

THIS is an excellent and practical little book. Dr. Anderson held various public appointments and conducted a large practice in the West Indies from 1860 till 1894, when. after thirty-four years' hard work, he retired and came back to England. He had seen a great deal of yellow fever, and had also, when he first went there, studied it under some of the most skilful physicians in the islands, The book before us contains the results of this long practice and extensive experience. It is eminently a *practical* work. Dr. Anderson does not theorise or speculate; he refers but little to other men's observations; but he tells us clearly and plainly what he saw and what conclusions he derived therefrom.

He divides the disease into two stages—(1) that of fever, and (2) that of jaundice, albuminous urine, and black vomit. He attributes great importance to the presence of albuminuria. Some writers have described a non-albuminuric form of the disease; Dr. Anderson, on the contrary, has never considered a case one of yellow fever unless the urine was albuminous. He admits that, during an epidemic, non-albuminuric cases sometimes occur, of which the symptoms resemble those of the first stage of yellow fever, but he believes these to be cases of malarial fever, in which, as often happens, some of the characteristics of yellow fever have been impressed on the malaria.

The symptoms of the disease and its varieties are clearly and lucidly described.

As regards treatment, if a case be seen early in the first stage, he recommends the administration of 20 grains of calomel and 24 grains of quinine, the dose to be repeated after three or four hours. He is convinced that this treatment sometimes cuts short the disease. If this treatment fails, or the case be seen too late to employ it, he uses purgatives to thoroughly clear out the intestine, and then a mixture of bicarbonate of potash and carbolic acid, given in effervescence with lime juice, this mixture being continued throughout the illness.

As regards the mode of spread of the disease, Dr. Anderson entirely disbelieves in contagion. "As regards personal communication of the disease, I may at once state that during the whole course of my long experience I have never met with a single case in which I thought yellow fever had been contracted by either mediate or immediate contact with a previous case or with a patient's exhalations or excreta." He believes the disease is due to some atmospheric and telluric conditions, and that, under suitable circumstances, it can originate *de novo* and entirely unconnected with any pre-existing case.

Lectures on the Malarial Fevers. By WILLIAM SYDNEY THAYER, M.D.; Associate Professor of Medicine in the Johns Hopkins University. London: Henry Kimpton, 82 High Holborn, W.C. 1898. 8vo. Pp. 326.

"To William Osler these pages are gratefully and affectionately dedicated." These touching words of dedication speak, trumpet-tongued, of the cordial relations which exist between the Professor and the Associate Professor of Medicine in the Johns Hopkins University. Nay, more, the spirit of William Osler seems to breathe through the pages of Dr. Thayer's work—a work which is based on sound clinical experience and scientific observation alike.

It is, after all, a matter for congratulation that the British Islands have for many years afforded but a barren field for the study of the malarial fevers. Time, indeed, was when this was not the case. London itself was in the olden days surrounded by a marshy district where paludism was not infrequent; now it is unknown in or near the metropolis.

But, although we dwellers at home may congratulate ourselves on our freedom from malarial infection, the "Sons of the Empire" are sorely tried by it when serving their Queen and country in distant parts of the World. The infrequency of malaria at home is, therefore, of itself a reason for the existence of the work before us. It has been written by an American professor of medicine. It is based largely on his personal experiences of the disease "Malaria," for the study of which unfortunately only too many opportunities still exist on the American Continent. It is a good book, and should be studied by all British physicians, whose sphere of practice lies or may lie in malarious districts.

The book includes nine "lectures." The first contains a brief history of our knowledge concerning the pathogenic agent of the malarial fevers. In subsequent lectures the methods of examination of the malarial blood are described, as well as the hæmocytozoa of the disease. The general conditions under which the malarial fevers prevail are indicated. Then follows a detailed clinical description of these fevers, their sequelæ and complications, morbid anatomy and general pathology. Lecture IX.—the last—is devoted to the important topics of diagnosis, prognosis, treatment and prophylaxis.

As regards the ætiology of malaria, it is rather disappointing to be told by Dr. Thayer that "on the whole, it must be said that we are absolutely ignorant of the form in which the malarial parasite exists outside of the human body, and equally ignorant of the manner in which it enters" (page 95). Be it observed that the author has come to this definite and somewhat dogmatic conclusion in the face of Dr. Patrick Manson's recent Goulstonian Lectures on the subject. "On the basis of the observation of flagellate bodies in the stomach of a mosquito which had been placed on an individual whose blood showed ovoid and crescentic forms, Manson suggests that the malarial parasite may pursue a regular extra-corporeal existence, the mosquito, as in the case of the *Filaria sanguinis hominis,* forming the intermediate host. The individual flagella are, according to him, forms intended to live outside of the human body. As an hypothesis, Manson's idea is interesting, though it must be acknowledged that it is seriously lacking in foundation" (page 94). We are not disposed to set aside Manson's researches in so summary a fashion.

The work is illustrated by nineteen very clear temperature charts, and by three beautiful plates of drawings by Mr. M. Brödel, showing the progressive development and life-history of the parasites of tertian, quartan, and æstivo-autumnal fevers respectively. They have been artistically lithographed by Messrs. I. Prang & Co., of Boston, U.S.A.

A Synopsis of the British Pharmacopœia. Compiled by H. Wippell Gadd. Third Edition. London: Baillière, Tindall & Cox. 1898. Pp. 183.

This wonderful pocket-synopsis has already reached a third edition. The contents have been carefully and thoroughly revised, and some additional information is now given, rendering the booklet still more useful to medical practitioners, and to students both of medicine and of pharmacy. In a paper cover it costs sixpence, bound in cloth the price is one shilling.

Outlines of Medical Jurisprudence for India. By J. D. B. Gribble, M.C.S., and Patrick Hehir, M.D. and F.R.S. Ed., &c.; Staff Surgeon H.H. the Nizam's Troops; Lecturer on Medicine and Pathology at the Hyderabad Medical School. Fourth Edition, revised and corrected. Madras: Higginbotham & Co. 1898. Pp. 542.

This book has been found very useful in India. The third edition, an issue of five thousand copies, published in 1892, was absorbed in a few years. This edition should, indeed, have appeared sooner had not Surgeon-Major Hehir been engaged on active service in the Tirah expedition.

It differs a good deal from works on medical jurisprudence, such as we are accustomed to in this country. It is not written specially for medical men, but rather for police officers, subordinates in the judicial service, and pleaders. Its object is to present the non-medical reader in an intelligible and simple form with such matter as is contained in the larger works on Indian medical jurisprudence. If a dead body be found, or a crime has been committed, it gives a list of points to which the attention of the first responsible person who appears upon the scene should be directed. These points include matters which are generally left to the police. Further evidence of the intention of the writers to make the book suitable for non-medical readers is afforded by the fact that all medical terms used in the text are fully explained in footnotes.

We think that this book fulfils very well the objects for which it was intended. It is clearly and well written; the language used is intelligible to all; and a number of illustrative cases are appended to each chapter.

Dr. Hehir refers often to the works of Taylor, Gray, Cooper, and several other writers, all of whose works were published years ago. It is to be regretted that in this edition he did not refer to Professor Dixon Mann's work—the most scientific English book on the subject.

We have noted with interest several points in this book. From what he says on the subject of evidence it would not appear the judge's lot in India is at all a happy one. "It is no exaggeration to say that a case scarcely ever comes before a criminal court in which there is not a certain amount of false or concocted evidence. The duty of a magistrate is not so much to decide which story is the true and which the false one, but to separate the falsehood and the truth on both sides." A witness does not seem ever to believe that a story is so convincing as not to need improvements.

The poison in most frequent use in India appears to be arsenic, except in Bengal Presidency, where opium heads the list. The use of the latter drug is nearly universal, but Dr. Hehir does not appear to think that it is in any way injurious if taken in small quantities, or that many people suffer in health through the excessive use of it.

PART III.

SPECIAL REPORTS.

REPORT ON PRACTICE OF MEDICINE.

By **Henry T. Bewley**, M.D. Univ. Dubl.; F.R.C.P.I.; Physician to the Adelaide Hospital; and Lecturer on Forensic Medicine and Hygiene, Trinity College, Dublin.

- I. EXPERIMENTAL STUDIES ON THE RE-EXPANSION OF THE LUNG AFTER OPERATIONS FOR EMPYEMA.
- II. THE TREATMENT OF PLEURAL EFFUSIONS WITH GUAIACOL.
- III. THE DIAGNOSIS OF THE POSITION OF THE INTERVENTRICULAR SEPTUM.
- IV. ON THE PROLONGED USE OF DIGITALIS.
- V. BARIUM CHLORIDE IN HEART DISEASE.
- VI. SODIUM SULPHATE AS A HÆMOSTATIC.
- VII. THE TREATMENT OF HÆMOPTYSIS.

I. EXPERIMENTAL STUDIES ON THE RE-EXPANSION OF THE LUNG WHEN THERE IS AN OPENING INTO THE PLEURAL CAVITY, ESPECIALLY AFTER OPERATIONS FOR EMPYEMA.

The re-expansion of the lung after operations for empyema has a great practical interest. There exist many theories as to its cause. Roser believes it to be due to the formation of pleural adhesions (it occurs, however, too quickly for this); Weissgerber and Bouveret that it is due to the predominance of the expiratory pressure over inspiration; Aufrecht believes it due to the inspiratory drag, especially when the bronchus has a larger lumen than the fistula in the thoracic wall.

Reineboth (Halle) has solved the riddle by manometric experiments on empyema patients and rabbits. He confirms the view that the affected lung is inflated by the sound lung, the air in forced expiration passing from one into the other main bronchus. It makes no matter whether the thoracic fistula is larger or smaller than the bronchus.

Aufrecht's view is also partly correct, especially when the fistula is considerably smaller than the bronchus.

If the fistula is covered by a well-fitting bandage, the lung expands with inspiration and contracts with expiration. In this case the same phenomena occur as when there is a small-sized fistulous opening; the lung expands by the inspiratory drag of the ribs. Hence it follows that it is advisable to use such bandages or dressings as will most completely prevent air passing in and out of the pleural cavity.

Coughing also tends to expand the lung. In one patient, after a fit of coughing, the pleuro-manometer rose 10 mm. above zero, and did not sink for several minutes. Coughing in empyema patients is not wholly to be checked; pulmonary gymnastics are to be recommended. Dense fibrinous thickenings of the pulmonary pleura hinder the expansion of the lung, and should, as far as possible, be removed by washing out the pleural cavity by sponges on handles, or by scraping with a sharp spoon.—*Deutsches. Archiv. f. klin. Med.*, Bd. LVIII., Hft. 2 & 3, and *Cbt. fr. inn. Med.*, Feb. 12, 1898.

II. THE TREATMENT OF SEROUS PLEURAL EFFUSIONS WITH GUAIACOL.

Dr. Prosorowski (Smolensk) treated eleven cases of pleural effusion by painting guaiacol on the skin. In all the cases the exudation was absorbed more rapidly than he had observed with other methods of treatment. The patients suffered no discomfort of any kind from the treatment. The irritation of the skin that followed the application of the guaiacol was so slight as to be of no importance. In his cases the guaiacol was painted on from five to seven times before cure resulted. There did not seem to be any connection between the size of the exudation and the duration of the cure. In all cases after the guaiacol was applied the temperature fell 0·5°—4·0° F. Immediately after this fall it rose again to its former level, or even higher. This rise generally reached its maximum about two hours after the guaiacol was painted on. If the patients' temperature was normal before the application, the fall of temperature was less than if pyrexia existed. During the treatment the amount of urine was increased.

Dr. Prosorowski was unable to suggest any fully satisfactory theory to account for the action of the guaiacol. The following hypothesis, however, appeared to him as a very probable explanation:—The guaiacol acts in two ways—(1) by irritation (stimulation) of the peripheral nerve endings it acts on the centres which regulate temperature and the vasomotor centres, causing an increase in the absorptive power of the pleura; (2) it makes its way into the circulating blood, and then destroys the noxious substances produced by the pleurisy.—*Deutsche med. Zeitung,* Mar. 31, 1898.

III. THE DIAGNOSIS OF THE POSITION OF THE INTERVENTRICULAR SEPTUM

Dr. S. H. Habershon holds that in cases of mitral disease in which there is accentuation of the pulmonary second sound it is quite possible to determine the position of the septum, and thus to gain information as to the relative size of the right and left cavities.

The cardiac sounds are heard better in proportion as they have to pass through fewer media from their seat of production to the ear; hence, the pulmonary second sound is heard more plainly over the right ventricle, and the aortic second sound is best heard over the left ventricle. (By right and left ventricle it is understood that reference is only made to those portions of the ventricle which approach the anterior chest wall.) Now, in many cases of mitral narrowing, if we listen with the stethoscope placed at the apex of the heart we hear a feeble second sound; while if we gradually move the stethoscope more and more towards the right we come to a spot where the second sound becomes loud, and remains loud as long as the stethoscope is placed over the position of the right ventricle. The spot where the loud sound is first heard corresponds with the position of the interventricular septum.

When the aortic second sound is accentuated nothing can be learned by this method of examination, as the sound is conducted down the sternum and obscures the phenomena.—*Ed. Med. Jour.,* June, 1898.

IV. THE EFFECTS OF THE PROLONGED USE OF DIGITALIS ON THE HEART.

Professor Hase and Professor Coplin gave to five guinea-pigs digitalis, 20 drops of the fluid extract a day, mixed with their food, during a period of four months. Five others of equal weight were used as control animals. At the end of the four months the guinea-pigs were all weighed, and the digitalis-fed animals weighed, taken together, 20 lbs. (5%) more than the others. All were then killed by bleeding, and their hearts examined. The digitalis hearts were firmer to the feel and looked thicker (especially the left ventricle) than did the others. On microscopic examination it was found that the muscle-fibres of the digitalis hearts were 0·02 mm. (20%) thicker than the others.—*Therap. Gaz.*, Dec. 15, 1897, and *Deutsche med. Zeit.*, March 31, 1898.

V. THE VALUE OF BARIUM CHLORIDE IN HEART DISEASE.

The *Therapeutic Gazette* for April 15th contains a leading article in which the writer compares the action of this drug to that of digitalis. In small quantities, he says, it possesses a physiological action closely allied to that of digitalis so far as its influence upon the heart is concerned. It slows the heart very greatly, steadies its rhythm, and noticeably increases the quantity of blood which is thrown out of the ventricle at each contraction. At the same time it increases blood pressure, as the careful studies of Kobert have proved.

The writer thinks it is probable, from the studies of this investigator and others, that it exercises a more powerful systolic influence over the ventricles than digitalis does, the slowing of the pulse being due rather to an excessive systolic action of the drug and to high arterial tension than to any effect which the drug may exercise upon the pneumogastric nerve. For this reason, he says, it is one which apparently should prove useful in a certain proportion of persons with cardiac diseases who, for one reason or another, fail to obtain benefit from digitalis, although the latter is superior in the majority of cases.

A number of clinicians, the writer continues, have employed this drug in the treatment of heart disease with failing compensation, both in adults and in children, particularly when the pulse is weak and irregular and is lacking in volume. The writer states that he has used barium chloride in a number of cases, and he has reached the conclusion that it is of value, although it must take rank below both digitalis and strophanthus as a cardiac tonic.

The dose for an adult is a teaspoonful of the one-per-cent. solution three times a day, and half as much for a child from six to ten years. These doses do not cause irritation of the gastro-intestinal tract, and very much larger doses of barium chloride are required before it will act as an irritant poison; the writer sees, therefore, no reason why it should not be tried in the treatment of heart disease.—*N. York Med. Jour.*

VI. SMALL DOSES OF SODIUM SULPHATE AS A HÆMOSTATIC.

In a number of cases of capillary bleeding in which the ordinary methods of treatment failed, Reverdin had very good results from the use of sulphate of sodium. He gives 1½ grains every hour. The treatment proved successful in cases of nose-bleeding, of metrorrhagia, and in operation cases in which no large vessels were bleeding, but the blood was coming from the capillaries of the part "as from a sponge." Reverdin believes the drug acts by promoting the coagulation of the blood. Experiments on animals bore out this view, if the sulphate was injected into the veins or given by the mouth: if, however, it was injected subcutaneously it delayed clotting.—*Rev. Med. de la Suisse Rom.* and *Deutsche med. Zeitung*, July 4, 1898.

VII. THE TREATMENT OF HÆMOPTYSIS.

Dr. C. Y. Bliss classifies this as follows: 1. Moral management. The alarm should be relieved by the assurance that it is not likely to prove fatal. Rest and quiet should be enjoined. 2. Position and rest. The patient should be left in a recumbent position and his clothing loosened without unduly disturbing him. Auscultation of the breathing over the front of the chest is permissible. If the bleeding has been profuse into one lung, an appropriate change of position may enable him to cough up the blood and avert the impending asphyxia. 3. Local applications. Ice to the chest apparently does good and has a soothing effect upon the patient's mind. The writer has not observed that catarrh follows its use. 4. Relief of cough. Unless this is severe it does not need treatment. It may even be beneficial in freeing the lungs from blood. If it is desired to reduce its frequency and severity, morphin hypodermatically is to be preferred. 5. Treatment addressed to the nervous system. In cases of nervous excitement opium in some form is most desirable. 6. The action of the bowels. It is generally, not to say invariably, advisable that the bowels should be opened as soon as possible and be kept freely opened; for, since the abdominal circulation is capable of containing a large part of the total amount of blood, it is not unreasonable to believe that the induction of brisk bowel-action by means of purgatives will cause a large amount of blood to pass into the intestinal vessels, and that this may tend to reduce the tension of the circulation elsewhere. The use of the bedpan should be enjoined, but enemata should be avoided. Probably nothing is better than the immediate administration of five grains of calomel, followed by a saline purgative at an appropriate interval. After this, free action of the bowels may be maintained by adding to the mixture to be given some magnesium sulphate and a carminative, as syrup of ginger, in sufficient quantity to produce two or three watery stools daily. 7. Other medicinal remedies. Objection is made to gallic acid because of its constipating effects, and to ergot because, while it contracts the smaller systemic arteries, it has no effect upon those of the lungs, and it may indirectly tend rather to raise the tension of the pulmonary circulation. There is little evidence to show that hamamelis, diluted sulphuric acid, and other astringents of this class, have any definite effect upon the smaller vessels of the lungs. More, perhaps, may be said for turpentine, the action of which in the hæmorrhage of purpura and scurvy is recognised to be of great value. 8. Diet. First in importance is the privation of fluid. If possible, reduce the total intake of fluid to half a pint in twenty-four hours. There is no valid argument for the administration of ice. A spare, semi-solid diet, such as a little milk pudding, bread and butter, thin sandwiches made with pounded chicken or hard-boiled eggs, which can be increased in quantity or improved in quality, should be employed. Stimulants of all kinds should be forbidden, except under special circumstances.—*Clinical Journal*, 1898, No. 271, p. 161, and *Am. Jour. of Med. Sci.*, Ap., 1898.

(*To be continued.*)

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

CLINICAL RECORD.

Undescended Testicle, giving rise to Distressing Symptoms due to Sarcomatous Degeneration ; Castration ; Recovery. By JAMES R. WALLACE, M.D., F.R.C.S.I. ; formerly Resident Surgeon to the Medical College Hospital, Calcutta.

E. C., an Anglo-Indian, aged twenty-five, short, thick-set, and of good constitution, was born a crypt-orchid, his left testicle having remained undescended from birth. There was always, as long as the patient could remember, a "lump" in the left groin. It had remained absolutely painless till about four months previous to his consultation with me, when he observed occasional acute pains in the swelling and a frequent sense of nausea. In a few weeks the pain became worse, the swelling more enlarged, and there was persistent vomiting, which confined him to his bed for a few days. The symptoms subsided, but with the resumption of his duties there was a recurrence of suffering. When I first saw him, on the 22nd of March, 1898, the lump in the groin was hard, tender and non-fluctuant. The slightest pressure upon it induced nausea. Sulphate of magnesia with tartar emetic in small doses internally, the application of belladonna and glycerine to the swelling, with rest in the bed, gave complete relief, and for three weeks the patient was able to go about his work. On the 25th of April he had a recurrence of all the bad symptoms above described, but finding that the slightest exertion was attended with a return of suffering, he was advised to undergo castration of the undescended testicle.

Accordingly on the 29th of April he was placed under chloroform by Dr. William Coulter, M.D. I cut down upon the testicle, doing the bulk of the dissection with the handle of my scalpel. The main vessels leading to the tumour were ligated and the mass was cut off above the ligature. All bleeding points were quickly secured by pressure forceps, so that the patient did not lose more than half an ounce of blood during the operation. The wound cavity was insufflated with iodoform and boric acid, a drainage tube was inserted and the incision closed by horsehair sutures. Boric gauze dressings were applied and changed on the second day, when also the tube was removed. The subsequent progress was most satisfactory. During the operation I had the skilful assistance of Dr. Arnold Caddy, F.R.C.S. Eng.

Remarks.—This case is most interesting from the diagnostic value of the reflex testicular vomiting as the characteristic sign of the disease present. On cutting into the testicle after removal, it was found to have undergone purulent inflammatory change, and as the structure of the mass seemed very much altered pathologically, it was sent to Surgeon-Major J. F. Evans, the Pathologist of the Calcutta Medical College, who reported on it as follows:—"I find the tumour which you sent me on the 29th April to be a round-celled sarcoma, with practically no trace remaining of the glandular structure of the organ in which the new growth arose. There is some evidence of inflammatory change and of hydrocele having occurred prior to the formation of the growth."

TREATMENT OF PNEUMONIA.

THE following is an extract from an Address on the above subject, delivered at the Polyclinic Hospital, by Dr. Solomon Solis-Cohen, published in *The Philadelphia Polyclinic*, Jan. 29, 1898:—

"I have referred to the use of oxygen by inhalation. Let me now repeat and emphasise the recommendation. It undoubtedly saves lives in many cases; but to do this it must be given promptly and persistently. To wait until a patient is moribund and then attempt to revive him with a few cubic feet of oxygen forced into his lungs would be ludicrous, were it not so serious. Oxygen to be useful must be given so soon as the thought that it may be necessary enters the physician's mind. The thought will be suggested by the respiratory distress and by the extent of local lesion as demonstrated by physical signs. Now either condition, whether severe nervous dyspnœa—*pneumoparesis*—which is especially associated with the pneumonia of influenza, or great mechanical difficulty of breathing, or their combination, calls for the timely and sufficient use of oxygen."

MEDICAL EDUCATION AND EXAMINATIONS IN IRELAND.

1898–1899.

MEDICAL students in Ireland, as elsewhere, have in the first instance to choose between University Degrees and Non-University Qualifications or Diplomas. Should they elect to try for an University Degree, their choice must lie between the University of Dublin, which requires a Degree in Arts before registrable Degrees in Medicine, Surgery, and Midwifery are conferred, and the Royal University of Ireland, which—while not requiring a full Arts Degree—yet rightly insists on a liberal education in Arts, tested by more than one searching examination in the same, before a candidate graduates in the three branches of medicine already mentioned—Medicine, Surgery, and Midwifery.

Outside the Universities, the chief Licensing Bodies are the Royal Colleges of Physicians and Surgeons. The Conjoint Examination Scheme between the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Dublin has ceased to exist. The position of the latter body as a Licensing Corporation under the Medical Act of 1886 has been defined by the appointment of Examiners in Surgery by the General Medical Council at the bidding of Her Majesty's Privy Council. The Royal Colleges are in a position to give a first-class working qualification in Medicine, Surgery, and Midwifery—a qualification which is registrable under the Medical Acts, which is universally recognised as one of high merit, and the possession of which is attended by no disabilities, such as preventing its possessor from dispensing medicines or keeping open shop for the sale of medicines if he is legally qualified to do so.

The Medical Schools in Ireland are—(1.) The School of Physic in Ireland, Trinity College, Dublin; (2.) The Schools of Surgery of the Royal College of Surgeons in Ireland (including the Carmichael College of Medicine and the Ledwich School of Medicine); (3.) The Catholic University Medical School, Cecilia-street, Dublin; (4.) The School of

Medicine, Queen's College, Belfast; (5.) The School of Medicine, Queen's College, Cork; and (6.) The School of Medicine, Queen's College, Galway.

Facilities for Clinical Instruction in fully-equipped Medico-Chirurgical Hospitals exist in Dublin, Belfast, Cork, and Galway; but, as a rule, the Schools of Medicine in Ireland are not attached to a given hospital, or *vice versâ*, as is the case in London and other large centres of medical education. The student will, however, have little difficulty in selecting a hospital in the wards of which he will receive excellent bedside teaching, and have ample opportunity of making himself familiar with the aspect and treatment of disease.

The detailed information which follows is authentic, being taken directly from the published calendars of the respective licensing bodies.

REGULATIONS PRESCRIBED BY THE GENERAL MEDICAL COUNCIL.

With regard to the course of Study and Examinations which persons desirous of qualifying for the Medical Profession shall go through in order that they may become possessed of the requisite knowledge and skill for the efficient practice of the Profession, the General Medical Council have resolved that the following conditions ought to be enforced without exception on *all* who commence their Medical Studies at any time after Jan. 1, 1892:—

(*a.*) With the exception provided below, the period of Professional Studies, between the date of registration as a medical student and the date of Final Examination for any Diploma which entitles its bearer to be registered under the *Medical Acts*, must be a period of *bonâ fide* study during not less than five years.

(*b.*) In every course of Professional study and Examinations, the following subjects must be contained:—

(I.) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity.
(II.) Chemistry, including the principles of the Science, and the details which bear on the study of Medicine.
(III.) Elementary Biology.
(IV.) Anatomy.
(V.) Physiology.
(VI.) Materia Medica and Pharmacy.
(VII.) Pathology.
(VIII.) Therapeutics.

(IX.) Medicine, including Medical Anatomy and Clinical Medicine.
(X.) Surgery, including Surgical Anatomy and Clinical Surgery.
(XI.) Midwifery, including Diseases peculiar to Women and New-born Children.
(XII.) Theory and Practice of Vaccination.
(XIII.) Forensic Medicine.
(XIV.) Hygiene.
(XV.) Mental Disease.

The first four of the five years of Medical Study should be passed at a School or Schools of Medicine recognised by any of the Licensing Bodies, provided that the First Year may be passed at a University, or Teaching Institution recognised by any of the Licensing Bodies, where the subjects of Physics, Chemistry, and Biology are taught.

A student who has, previous to registration, attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any University, School of Medicine, or Teaching Institution recognised by any of the Licensing Bodies, may without further attendance be admitted to examination in these subjects: provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

The exception referred to above in (*a*) is as follows:—

Graduates in Arts or Science of any University recognised by the General Medical Council who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, are held to have completed the first of the five years of Medical Study.

The Examinations in the Elements of Physics, Chemistry, and Biology should be passed before the beginning of the Second Winter Session.

I.

UNIVERSITY OF DUBLIN.

DEGREES AND DIPLOMAS IN MEDICINE, SURGERY, AND MIDWIFERY.

The Degrees and Diplomas in Medicine, Surgery, and Midwifery granted by the University are as follows:—

The Degrees are:—

1. Bachelor in Medicine.
2. Bachelor in Surgery.
3. Bachelor in Obstetric Science.
4. Doctor in Medicine.
5. Master in Surgery.
6. Master in Obstetric Science.

The Diplomas are:—

1. Diploma in Medicine.
2. Diploma in Surgery.
3. Diploma in Obstetric Science.

Besides these Degrees and Diplomas, the University also grants a—

Qualification in State Medicine.

REGULATIONS FOR STUDENTS WHO MATRICULATED ON OR BEFORE 25TH NOVEMBER, 1891.

As the number of students who matriculated before November, 1891, is now small, it seems unnecessary to print in full the conditions which must be fulfilled in order that such candidates should qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.). The Registrar of the School of Physic in Ireland will supply all information on application to him.

REGULATIONS FOR STUDENTS WHO MATRICULATED SINCE 1891.

The following conditions must be fulfilled in order to qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.):—

I. The Student must be of B.A. standing, and his name must be for at least five (Academic) years on the Books of the Medical School, reckoned from the date of his Matriculation. He may carry on his Arts Course concurrently with his Medical Course, and he need not have taken his B.A. before presenting himself for his Final Medical Examination, but he cannot have the Medical Degrees conferred without the Arts Degree.

II. The following Courses must have been attended:—

[NOTE.—The Courses marked thus (*) must have been taken out before the Student can present himself for any part of the Final Examination. In addition, the Courses marked thus (†) must have been taken out before he can present himself for Section B; the Courses marked thus (‡) before he can present himself for Section C; and the Courses marked thus (§) before he can present himself for Sections D and E.]

1. LECTURES.

WINTER COURSES.

**Systematic Anatomy.*

**Practical Anatomy (with Dissections), 1st year.*

**Practical Anatomy (with Dissections), 2nd year.*

**Applied Anatomy (with Dissections).*

**Chemistry.*

†Surgery.

**Physiology (two Courses).*

†Practice of Medicine.

‡Midwifery.

†Pathology.

SUMMER COURSES.

**Practical Chemistry.*
**Practical Histology.*
**Botany.*
**Zoology.*
**Materia Medica and Therapeutics.*
Medical Jurisprudence and Hygiene.
§Operative Surgery.

TERM COURSES.

**Physics.*—Michaelmas, Hilary, and Trinity Terms.

§2. HOSPITAL ATTENDANCE.

1. Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital, for two years previous to the commencement of their Metropolitan Medical Studies, may be allowed, on special application to the Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

§3. PRACTICAL VACCINATION.

One month's instruction in Practical Vaccination to be attended at the Vaccine Department, Local Government Board for Ireland, 45 Upper Sackville-street; at No. 1 East Dispensary, 11 Emerald-street; or, until further notice, at the Grand Canal-street Dispensary.

§4. MENTAL DISEASE.

A Certificate of attendance on a three months' Course of Practical Study of Mental Disease in a recognised Institution.

‡5. PRACTICAL MIDWIFERY.

A Certificate of attendance on a six months' Course of Practical Midwifery with Clinical Lectures, including not less than thirty cases.

§6. OPHTHALMIC SURGERY.

A Certificate of attendance on a three months' Course of Ophthalmic Surgery.

III. The following Examinations must be passed:—

The Previous Medical or Half M.B. Examination.
The Final Examination.

The Previous Medical Examination must be passed in all its parts before any part of the Final can be entered for, except in the case of Candidates for Diplomas.

A.—PREVIOUS MEDICAL EXAMINATION.

This Examination is divided into—

1. Physics and Chemistry.
2. Botany and Zoology.
3. Anatomy and Institutes of Medicine (Practical Histology and Physiology).

The Examination in Anatomy includes examination on the dead subject.

Before presenting himself for examination in any of the subjects the Student must have obtained credit for the corresponding Courses of Lectures and Practical Instruction.

It is not necessary that the Student should pass in all these subjects at the same examination; he is allowed to present himself for examination in as many, or as few of them as he pleases.

A Candidate rejected at the May Examination will not be allowed to present himself for examination *in the same subjects* at the June Examination.

Candidates who fail in any part of the Examination are liable to be excluded from further examination *in the same subjects*, for a period not exceeding six months, if, in the opinion of the Examiners, they have given evidence of careless preparation.

Any Student who has obtained a Moderatorship in Natural Science, or a First Honor in Natural Science in both his Junior and Senior Sophister years, and has credit for attendance at not less than thirty Lectures in Botany and Zoology in his Sophister years, may present himself at the Previous Medical Examination in these subjects.

Examinations will be held on Nov. 14, Jan. 16, May 23, June 22, June 26, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 7 and 11; Jan. 9 and 13; May 15 and 19; June 15 and 20; June 19 and 23, respectively.

No Candidate will be allowed in for any Examination unless he has given notice within the days specified.

The Final Examination is arranged as follows:—

FIRST PART.

SECTION A.

Applied Anatomy (Medical and Surgical), paper.

Applied Physiology, *vivâ voce.*

Materia Medica and Therapeutics, paper and *vivâ voce.*

Examinations for Section A will be held on Nov. 21, Jan. 23, May 29, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 14 and 18, Jan. 16 and 20, May 22 and 26, respectively.

SECTION B.

Medical Jurisprudence and Hygiene, paper and *vivâ voce.*
Medicine, paper and *vivâ voce.*
Surgery, paper and *vivâ voce.*
Pathology, paper and *vivâ voce.*

Examinations for Section B will be held on Nov. 28, Jan. 30, June 26, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 21 and 25, Jan. 23 and 27, June 19 and 23, respectively.

Section A may be passed in any part of the Fourth Year, provided the corresponding Curriculum shall have been completed; Section B not before Trinity Term of the Fourth Year.

Section A must be passed before the Candidate can present himself for Examination in Section B. Both Sections must be passed at least one Term before the Candidate can present himself for Exmination in Sections C, D, or E.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for Section A.

No Candidate will be allowed in for any Examination unless he has given notice within the days specified.

SECOND PART.

SECTION C.

Midwifery, paper and *vivâ voce.*
Gynæcology, paper and *vivâ voce.*
Obstetrical Anatomy, paper.

Examinations for Section C will be held on Nov. 21, Jan. 23, May 29, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 14 and 18, Jan. 16 and 20, May 22 and 26, respectively.

SECTION D.

Clinical Medicine.
Mental Disease.

Examinations for Section D will be held on Nov. 28, Jan. 30, June 5, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 21 and 25, Jan. 23 and 27, May 29 and June 2, respectively.

SECTION E.

Clinical Surgery.
Operations.
Ophthalmic Surgery.

Examinations for Section E will be held on Dec. 5, Feb. 6, June 12, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 28 and Dec. 2, Jan. 30 and Feb. 3, June 5 and 9, respectively.

One Section of the Second Part must be passed in Trinity Term of the Fifth Year, or subsequently. The other two may be passed in any Term of the Fifth Year, provided the corresponding Curriculum shall have been completed. Subject to this provision the Sections may be taken in any order.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for the Section for which he first presents himself.

The Candidate must also produce Certificates of attendance at the Hospitals where the Courses prescribed for each Section are to be taken out.

No Candidate will be allowed in for any Examination unless he has given notice within the days specified.

UNIVERSITY DIPLOMAS.

Candidates for the Diplomas in Medicine, Surgery, and Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts, and five years in Medical Studies.

The dates, regulations, and subjects of Examination are the same as for the Final Examination, except that it is not necessary to attend the Courses of Lectures in Botany and Zoology, nor to pass the Previous Medical Examination in these subjects.

A Diplomate on completing his Course in Arts, and proceeding to the Degree of B.A. may become a Bachelor, by attending the Lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the Degree Fees.

The *Liceat* fees are the same as for the Degrees.

Each Candidate who has completed the prescribed Courses of study and passed all the Examinations will be entitled, if a Graduate in Arts, to have conferred on him the Degrees of M.B., B.Ch., B.A.O., on payment to the Senior Proctor of the Degree Fees amounting to £17. A corresponding regulation applies to the Diplomas, the Fees for which are £11. He will also obtain from the Senior Proctor a Diploma, entitling him to be entered on the Register of Medical Practitioners under the Medical Act, 1886.

QUALIFICATION IN STATE MEDICINE.

The Diploma in State Medicine is conferred, after examination, by the University of Dublin, upon Candidates fulfilling the following conditions:—

1. The Candidate must be a Doctor in Medicine, or Graduate in Medicine and Surgery, of Dublin, Oxford, or Cambridge.

2. The name of the Candidate must have been on the Medical Register at least twelve months before the Examination.

3. The Candidate must have completed, subsequent to Registration, six months in a Laboratory, recognised by the Provost and Senior Fellows, in practical instruction in Chemistry and Bacteriology applied to Public Health, and also have attended, practically, outdoor Sanitary work for six months, under an approved Officer of Health.*

The Examination to be passed by the Candidate is prescribed as follows:—

EXAMINATION FOR DIPLOMA IN STATE MEDICINE.

STATE MEDICINE AND HYGIENE.—*Examination by Paper. Time, 2 hours.*

CHEMISTRY.—*Examination by Paper, and in Laboratory. Time, 1½ hour each.*

PHYSICS AND METEOROLOGY.—*Examination vivâ voce.*

ENGINEERING.—*Examination by Paper. Time, 1½ hour.*

SANITARY ENGINEERING.—*Practical Examination.*

MORBID ANATOMY.—*Examination vivâ voce.*

PRACTICAL BACTERIOLOGY.

EPIDEMIOLOGY AND WORK AND DUTIES OF A PUBLIC OFFICER OF HEALTH.

VITAL STATISTICS.—*Examination by Paper. Time, 1½ hour.*

MEDICAL JURISPRUDENCE.—*Examination vivâ voce.*

LAW.—*Examination by Paper. Time, 1½ hour.*

Candidates are required to send in their names to the Registrar of the School of Physic at least a week before the first day of Examination.

Candidates who have registered since January 1st, 1890, are required to apply to the Board of Trinity College for leave to present themselves a month before the Examination begins, and to submit at the same time Certificates of the required Courses of Study.

The Examination will begin on December 5th.

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* This condition does not apply to Practitioners registered, or entitled to be registered, on or before 1st January, 1890.

II.

ROYAL UNIVERSITY OF IRELAND.

COURSES FOR DEGREES IN MEDICINE, SURGERY, AND OBSTETRICS.

General Regulations.

The Course for these Degrees shall be of at least five Medical years' duration; but Graduates in Arts or Science who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, shall be held to have completed the first of the five years of Medical Study.

Students who commenced their Medical Studies after Jan. 1, 1892, must furnish evidence of having been registered by the Medical Council, as Students in Medicine, for at least 57 months, before being admitted to the M.B., B.Ch., and B.A.O. Degrees Examination.

No one can be admitted to a Degree in Medicine who is not twenty-one years of age.

All Candidates for these Degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following Examinations:—

The Matriculation Examination.
The First University Examination.
The First Examination in Medicine.
The Second Examination in Medicine.
The Third Examination in Medicine.
The Examination for the M.B., B.Ch., B.A.O. Degrees.

The Course of Medical Studies shall be divided into five Periods of one Medical Year each.

When a Student has fully completed the Course of Medical Studies prescribed for any year, he may proceed with the studies assigned to the year next following, without passing the corresponding examination.

There shall be an interval of at least one Academical Year between the passing of one examination and the being admitted to the examination next subsequent. But the Senate may, under special circumstances, allow a Candidate to present himself for his following examination within a less interval.

The Senate may allow any Candidate who so desires to present himself for the Third Examination in Medicine, and for the Degrees Examination at the same Examination period, provided that an interval of three Medical years shall have elapsed from the time of passing the Second Examination in Medicine, and provided that such Candidate shall have completed the entire course of studies, &c., prescribed for the five years of the Medical curriculum.

Candidates shall furnish proper Certificates of attendance at the several Courses of Medical Instruction prescribed for the different years of the curriculum.

No such certificate will be received unless it attests a *bonâ fide* attendance at three-fourths of the whole Course. *Students are reminded that certificates of attendance at Night Lectures will not be accepted.*

No Certificates of instruction in any of the Courses of Medical Studies, in connection with either Lectures or Hospitals, can be received, unless issued by an Institution which has been formally recognised by the Senate.

The prescribed courses in Natural Philosophy, Chemistry, Biology, Anatomy and Physiology must be attended in Institutions provided with the appliances required for the performance by the Students of proper Experimental Courses and Practical Work in those subjects.

Where Certificates in a special department (Fever, Mental Diseases, Ophthalmology, &c.) are presented, they must be signed by the Physician or Surgeon in charge of such department.

MEDICAL CURRICULUM.

First Year.

The First Year's course of Medical Studies consists of:—

(*a.*) Natural Philosophy, taught experimentally:—
  Either a Six Months' Course with Lectures (illustrated experimentally) on at least three days in the week;
  Or, a Three Months' Course with Lectures (illustrated experimentally) on at least five days in the week.
(*b.*) Chemistry, a Six Months' Systematic Course.
(*c.*) Biology:—
  Botany, a Three Months' Course, with Lectures and Demonstrations on at least three days in the week.
  Zoology, a Three Months' Course, with Lectures and Demonstrations on at least three days in the week.
(*d.*) Anatomy, a Six Months' Systematic Course (Optional).
(*e.*) Practical Anatomy (Dissections), a Six Months' Course (Optional).

The Systematic Course in Anatomy and Dissections should enable the Student to acquire a good knowledge of the bones, joints, and muscles, and such knowledge of the vessels and viscera and of the larger nerves as he may reasonably be supposed to have acquired at this period of his Medical Studies.

(*f.*) Practical Chemistry, a Three Months' Course (Optional).

This attendance must not be simultaneous with attendance at the Systematic Course.

SECOND YEAR.

The studies assigned to the Second Year must not be entered upon until the completion of the course assigned to the First Year; that is, until the completion of such a course of study as would qualify a candidate for admission to the First Examination in Medicine.

The Second Year's course of Medical Studies consists of:—

(*a.*) Anatomy, a Six Months' Systematic Course; (*b.*) Practical Anatomy (Dissections), a Six Months' Course;	If not attended during the First Year.

Students who in the First Year have attended the courses of Anatomy prescribed for the Second Year, may in the Second Year attend the course of Anatomy prescribed for the Third Year.

(*c.*) Practical Chemistry, a Three Months' Course (if not attended during the First Year).

(*d.*) Physiology, a Six Months' Systematic Course.

The Systematic Course in Physiology should enable the Student to acquire a good knowledge of Physiological Chemistry, and of the following:—Development of tissues; the Physiology of muscle, nerve-fibres, and nerve-cells (but not of the brain and spinal cord); also, the Physiology of blood, lymph, and lymphoid organs, digestion, circulation, respiration, animal heat, secretion and excretion (including the functions of the skin and kidneys). The advanced portions of the subject—*e.g.*, Embryology, the Histology and Physiology of the central nervous system and of the organs of special sense, of voice, and of reproduction—are comprised in the Advanced Systematic Course of Physiology prescribed for the Third Year.

(*e.*) Materia Medica, Pharmacology and Therapeutics, a Three Months' Course (Optional). This subject may be studied in either the Second or Third Year of Medical Studies; but it will be included in the subjects of the Third Examination in Medicine.

(*f*.) Practical Physiology and Histology (Optional). A Three Months' Laboratory Course, of at least two hours three times a week. One-third at least of the time shall be devoted to Practical Physiology, and this shall be stated explicitly in the certificate or certificates of attendance. This Course may be taken either in the Second or in the Third Year.

(*g*.) Hospital Attendance.

Attendance during a *Winter* Session of Six Months, and a *Summer* Session of Three Months at a Medico-Chirurgical Hospital recognised by the University, and at the Clinical Lectures delivered therein.

In and after 1899, the Hospital Attendance required for the second year will be *Attendance during a Winter Session of Six Months;* but the total Hospital Attendance will remain as heretofore—*i.e.*, Attendance during thirty-three months.

THIRD YEAR.

No certificate of attendance at instruction in any of the branches of study assigned to the Third Year will be accepted, where such attendance appears to have taken place prior to the completion of the Second Year of Medical Studies, except as herein provided.

The Third Year's Course of Medical Studies consists of—

(*a*.) Anatomy, a Six Months' Advanced Systematic Course;
(*b*.) Practical Anatomy (Dissections), a Six Months' Course;
} If not attended during the Second Year.

The Course of Advanced Systematic Anatomy should be such as to enable Students to perfect their knowledge of the branches of Anatomy prescribed for the Second Examination in Medicine, and also of the whole nervous system and of the organs of sense.

(*c*.) Physiology. A Six Months' Advanced Systematic Course.

The Course of Physiology must be distinct from the Course in the Second Year of Medical Studies. It shall deal expressly with those parts of the subject which are not prescribed for the Second Year's Course, and shall comprise Embryology, the Histology and Physiology of the central nervous system, and of the organs of special sense, of voice, and of reproduction.

(*d.*) Practical Physiology and Histology (if not attended during the Second Year).

(*e.*) Any *one or two* of the following:—

(i.) Medicine, a Six Months' Course.

(ii.) Surgery, a Six Months' Course.

(iii.) Midwifery, and Diseases of Women and Children.

This may be attended either as one complete course, of at least six months, embracing both branches of the subject, or as two courses of three months each, one in Midwifery, the other in Diseases of Women and Children. These two courses must not be simultaneous.

(*f.*) Materia Medica, Pharmacology and Therapeutics, a Three Months' Course (if not attended during the Second Year).

(*g.*) Practical Pharmacy.*

A Three Months' Course, with lectures on at least two days in the week, given in a recognised School in a properly equipped Laboratory by a duly appointed Lecturer on Pharmacy. (This Course may be attended before, at the same time as, or after that on Materia Medica, but must be attended in the Third Year).

(*h.*) Hospital Attendance.

Attendance during a *Winter* Session of Six Months, and a *Summer* Session of Three Months at a General Hospital recognised by the University and at the Clinical Lectures delivered therein.

Any of the following attendances may take place at any time during the Third, Fourth, or Fifth years:—

(*i.*) Fever Hospital.

Attendance during a period of three consecutive months at a Fever Hospital of repute, or in the Fever Wards of a General Hospital. If the attendance takes place during a regular Winter or Summer Session, it may be reckoned as a portion of the prescribed total Hospital attendance of thirty-three months.

But neither attendance at a Fever Hospital, nor the "Personal charge" of Fever cases, can be recognised, where it takes place prior to attendance at the course of Lectures on Theory and Practice of Medicine.

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* All candidates must lodge certificates of having attended this course in accordance with these regulations.

(*j.*) Attendance on at least six *Post-mortem* Examinations.

(*k.*) Attendance for at least three consecutive months in a General Hospital as Clinical Clerk, and three consecutive months as Dresser; such attendances not to be simultaneous.

Fourth Year.

No certificate of attendance at instruction in any of the branches of study assigned to the Fourth Year will be accepted, where such attendance appears to have taken place prior to the completion of the Third Year of Medical Studies, except as herein provided.

The Fourth Year's Course comprises the following subjects at least:—

(*a.*) Such of the following as may not have been attended during the Third year of Medical Studies:—

- (i.) Medicine, a Six Months' Course.
- (ii.) Surgery, a Six Months' Course.
- (iii.) Midwifery, and Diseases of Women and Children, a Six Months' Course.

(*b.*) Operative Surgery.

The course of instruction must be given in a recognised Medical School by a duly appointed Lecturer in Surgery. The Certificate of attendance must show that the Candidate has attended at least three-fourths of the whole period of the Course, such attendances not to be under any circumstances less than on twenty-four distinct days; and that the Candidate himself has, during such Course, performed at least four major operations on the dead subject under the direction of the Lecturer.

Printed Forms of this Certificate may be had on application.

(*c.*) Medical Jurisprudence, a Three Months' Course.

(*d.*) Pathology, a Three Months' Systematic Course of at least two lectures per week in a recognised Medical School.

Practical Pathology, a Three Months' Laboratory Course of at least three days per week in a recognised Medical School.

These Courses may be taken simultaneously.

(*e.*) Ophthalmology and Otology, a Three Months' Systematic Course in a recognised Medical School. This Course may be attended either before or at the same time as, but not after, the Hospital attendance in these subjects.

(*f*.) Hospital attendance.

Attendance during a *Winter* Session of Six Months and a *Summer* Session of Three Months at a General Hospital recognised by the University and at the Clinical Lectures delivered therein.

If not attended during the Third Year:—

(*g*.) Fever Hospital.

Attendance during a period of three consecutive months at a Fever Hospital of repute, or in the Fever Wards of a General Hospital.

(*h*.) Attendance on at least six *Post-mortem* Examinations.

(*i*.) Attendance for at least three months in a General Hospital as Clinical Clerk, and three months as Dresser; such attendances not to be simultaneous.

FOURTH AND FIFTH YEARS.

Attendance on the remaining parts of the Medical Curriculum may take place during either the Fourth or the Fifth Year. These parts are—

(*a*.) Sanitary Science.

A Three Months' Systematic Course in a recognised school. This Course shall include practical demonstration on Hygienic Apparatus and Models, and visits to Institutions and Buildings where Sanitary Appliances may be inspected.

The following are the particulars of this Course:—

An elementary knowledge of—

Air.—Composition of Air; Impurities in Air; Effects of Impurities.

Ventilation.—Amount of Fresh Air required; Cubic Space; Natural Ventilation; Artificial Ventilation; Sufficiency of Ventilation.

Water.—Examination of Water; its properties and composition; Impurities; Effects of Impurities; Water Supply; Purification of Water.

Food and Dieting.—General Principles of Diet; Diseases connected with Food; Quality, Choice and Cooking of Food.

Removal and Disposal of Sewage.

Habitations and Hospitals.—Construction, Warming, Lighting.

Soils and Sites.

Clothing and Exercise.

Disposal of the Dead.
Disinfection and Deodorisation.
Climate and Meteorology.
Causation and Prevention of Disease.
Duties of Medical Officers of Health.
The More Important Sanitary Acts.
The Elements of Statistics.

(*b.*) Mental Diseases.

A Three Months' Course in a recognised Institution where Clinical Instruction on Mental Diseases is given.

(*c.*) Practical Midwifery.

Attendance for a period of six months at a recognised Midwifery Hospital containing not less than fifteen beds in regular occupation where Clinical Instruction in Midwifery and Diseases of Women and Children is given, or for six months at a Midwifery Dispensary, recognised by the Senate, where similar Clinical Instruction is given. During this period the Candidate is required to attend at least *twenty* Labours, of *ten* of which at least he must have had personal charge.

(*d.*) Ophthalmology and Otology. Attendance for a period of three months at a recognised Hospital, having at least ten beds devoted to diseases of the Eye and Ear.

If not already attended:—

(*e.*) Fever Hospital:

Attendance during a period of three consecutive months at a Fever Hospital of repute, or in the Fever Wards of a General Hospital.

(*f.*) Attendance on at least six complete *Post-mortem* Examinations.

(*g.*) Attendance for at least three months in a General Hospital as Clinical Clerk, and three months as Dresser; such attendances not to be simultaneous.

(*h.*) "Personal charge" of at least ten Fever cases.

Printed Forms of all Certificates of Personal Charge of Cases may be had on application.

N.B.—The expression *Personal Charge* implies that the student fulfils towards the case the duties commonly assigned to a Clinical Clerk.

Attendance in a Fever Hospital, or on Fever Cases, must not take place during the period of attendance on Practical Midwifery and Gynæcology.

(*i.*) Vaccination.

A short course of practical instruction under a Public Vaccinator, including attendance on at least ten distinct days at a Dispensary when vaccination is being performed.

Printed Forms of this Certificate may be had on application.

FIFTH YEAR.

Hospital Attendance. Attendance during a *Winter* Session of Six Months at a recognised General Hospital, and at the Clinical Lectures delivered therein.

THE EXAMINATION FOR THE M.B., B.CH., B.A.O. DEGREES.

Candidates may present themselves for this Examination after an interval of such period, not being less than one Medical Year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they shall have completed the entire Medical Curriculum.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

Each Candidate must send to the Secretaries, on or before April 4, for the Summer Examination, and September 5, for the Autumn Examination, a printed form of application for admission, accurately filled up and signed by the Candidate, together with the prescribed fee of £2.

This Examination consists of three parts:—

(*a.*) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology.

(*b.*) Surgery, Theoretical, Clinical, and Operative, including the use of Instruments and appliances; Surgical Anatomy; Ophthalmology and Otology,[a] Surgical Pathology.

(*c.*) Midwifery and Diseases of Women and Children.

All Candidates must enter for and go through the entire Examination, but a Candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the Examiners.

Upon completing satisfactorily his Examination in all three divisions, the Candidate will receive, in addition to the parchment Diplomas recording his admission to the M.B., B.Ch., B.A.O. Degrees, a Certificate of having passed a Qualifying Examination in the subjects of Medicine, Surgery, and Midwifery.

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[a] Candidates at this Examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope.

The fee for this Certificate is *Ten Pounds*, which must be paid before admission to these Degrees.

DIPLOMA IN SANITARY SCIENCE.

This Diploma is conferred only on Graduates in Medicine of the University.

Candidates may present themselves for this Examination after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. Degrees.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

Each Candidate must send to the Secretaries, on or before June 6, a printed form of application for admission, accurately filled up and signed by the Candidate, together with the prescribed fee of £2.

On satisfying the Examiners the Candidate must pay a further fee of £3 before the Diploma can be granted to him.

Every Candidate must, when entering for the Examination, produce:—[a]

(*a*.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, attended during a period of six months Practical Instruction in a Laboratory approved by the University. The nature of this course is fully indicated by the detailed Syllabus of the Examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology, &c. An Institution applying to be recognised as fulfilling the conditions of the Regulations in regard to the course of Practical Instruction in a Laboratory, shall be required to include in the instruction given in such Institution the various subjects set forth in this Syllabus, and special application for recognition must be made.

(*b*.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, for six months practically studied the duties of out-door Sanitary work under the Medical Officer of Health of a County or large Urban District.

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[a] These rules (*a*), (*b*), shall not apply to Medical Practitioners registered or entitled to be registered on or before Jan. 1, 1890.

The Subjects of this Examination are:—

Physics;
Climatology;
Chemistry;
Microscopy;
Bacteriology;
Geology;
Sanitary Engineering;
Hygiene, Sanitary Law, and Vital Statistics.

The Candidate must draw up reports on the Sanitary condition of Dwelling Houses, or other buildings selected for the purpose.

N.B.—Proficiency in practical work and an adequate acquaintance with the instruments and methods of research which may be employed for Hygienic investigations are indispensable conditions of passing the Examination.

DIPLOMA IN MENTAL DISEASES.

This Diploma is conferred only on Graduates in Medicine of the University.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

Each Candidate must send to the Secretaries, on or before Sept. 5, a printed form of application for admission, accurately filled up and signed by the Candidate, together with the prescribed fee of £2.

Each Candidate who satisfies the Examiners must pay a further fee of £3 before the Diploma can be granted to him.

The subjects for this Examination are those prescribed for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Disease.

BELFAST.

QUEEN'S COLLEGE.

Clinical instruction is given at the Belfast Royal Hospital. The Ulster Hospital for Diseases of Women and Children, the Belfast Maternity Hospital, the Belfast Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Belfast District Lunatic Asylum, and the Belfast Hospital for Sick Children are open to students.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast, or from Dr. R. L. M'Kisack, Secretary, Medical Staff, Royal Hospital.

CORK.

QUEEN'S COLLEGE.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students also can attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in-Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (thirty weeks), but the hospitals are open to students in May, June, and July also, and arrangements have been made for the delivery of some of the three months' Courses of lectures during the months of April, May and June.

GALWAY.

QUEEN'S COLLEGE.

Clinical instruction is given at the Galway County Infirmary and the Galway Town Hospital.

Prizes.—Attached are eight scholarships of the value of £25 each. The Council may award Exhibitions to matriculated students at the examinations for junior scholarship. All scholarships and exhibitions of the second, third, and fourth years may be competed for by students who have attained the requisite standing in any medical school recognised by the College Council, and have passed the Matriculation Examination in the College, or in the Royal University of Ireland.

III.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS, IRELAND.

OUTLINE MEDICAL COURSE APPLICABLE TO CANDIDATES FOR THE LICENCES OF THE ROYAL COLLEGES.

These Regulations apply to Candidates commencing Medical Study after 1st January, 1892.

1. Enter for and pass a Preliminary Examination recognised by the General Medical Council.

The Subjects are as follows:—

Fee, £2 2s.
(Matriculated Pupils, R.C.S., £1 1s. See note, page 356.)

(*a*) ENGLISH LANGUAGE, including Grammar and Composition.

(*b*) LATIN, including Grammar, Translation from specified authors, and Translation of easy passages not taken from such authors.

(*c*) MATHEMATICS, comprising—(*a*) Arithmetic, (*b*) Algebra, including simple Equations, (*c*) Geometry, the subject matter of Euclid, Books, i. ii. and iii., with easy deductions.

(*d*) ONE OF THE FOLLOWING OPTIONAL SUBJECTS: (*a*) Greek; (*b*) any Modern Language; (*c*) Logic.

And at once—

2. Register as a Medical Student on a form obtainable at the Royal College of Surgeons from the Registrar. No Fee.

3. Enter for and attend Courses for the First Professional Examination.	Winter six months	Dissections ...	£5	5
		Chemistry ...	3	3
		Physics ...	3	3
	Summer three months	Practical Chemistry	5	5
		Pharmacy ...	3	3
		Biology ...	3	3
			£23	2

4. Enter for and pass the First Professional Examination.

Fee, £15 15s.
(Matriculated Pupils, R.C.S., £10 10s. See note, page 356).

SUBJECTS OF EXAMINATION.

1. (*a*) CHEMISTRY; (*b*) PHYSICS.
2. PRACTICAL PHARMACY.
3. ELEMENTARY BIOLOGY.
4. ANATOMY, viz.—Bones, with attachments of muscles and ligaments —Joints.

Candidates may take this Examination as a whole at one time, or in four parts, but no portion earlier than the end of the first Winter Session.

5. Enter for and attend Courses for the Second Professional Examination.	Winter six months	Hospital (9 months)	£12	12
		Anatomy ...	3	3
		Dissections ...	5	5
		Physiology ...	3	3
	Summer three months	Histology ...	5	5
		Materia Medica ...	3	3
			£32	11

Materia Medica may be deferred to the Third Year.

6. Enter for and pass the Second Professional Examination.

	SUBJECTS OF EXAMINATION.
Fee, £10 10s.	1. ANATOMY.—The Anatomy of the whole Human Body. 2. HISTOLOGY. 3. HUMAN PHYSIOLOGY } if not deferred. 4. MATERIA MEDICA } if not deferred.

The Candidate must present himself, in the first instance at least, in Anatomy and Histology; if he pass in either of these subjects, he may, at the discretion of the Examiners, get credit therefor. Physiology and Materia Medica may, at the option of the Candidate, be passed at the end of the second or during the third year.

☞ The Lectures on Physiology must be attended before admission to *any part* of the Second Professional Examination.

			£	s.
7. Enter for and attend Courses for the Third Professional Examination.	Winter six months	Hospital (18 months[a])	£25	4
		Dissections ...	5	5
		Medicine ...	3	3
		Surgery ...	3	3
		Midwifery ...	3	3
		Pathology ...	3	3
	Summer three months	Operative Surgery ...	5	5
		Public Health and Forensic Medicine	3	3
			£51	9

8. Enter for and pass the Third Professional Examination.[b]

	SUBJECTS OF EXAMINATION.
Fee, £9 9s.	1. MEDICINE. 2. SURGERY. 3. PATHOLOGY. 4. THERAPEUTICS. 5. PUBLIC HEALTH AND FORENSIC MEDICINE.

A Candidate must present himself, in the first instance at least, in Medicine, Surgery (including Therapeutics), and Pathology. Should he pass in either Medicine or Surgery, he shall get credit therefor, even if he has failed in other parts of the Examination.

		£	s.
9. Enter for and attend Courses for the Final Examination.	Maternity Hospital,[b] £6 6s., £8 8s., or ...	£10	10
	Ophthalmic Certificate ...	3	3
	Vaccination [c] ...	1	1
	Clinical Instruction in Mental Diseases [b] ...	3	3
		£17	17

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[a] In addition to that attended in the Second Year, with evidence of attendance in Fever Wards.

[b] This examination cannot be taken earlier than the end of the Fourth Winter Session.

[c] May be taken in the Fourth Year.

10. Enter for and pass the Final Examination.

Fee, £6 6s.	Subjects of Examination. 1. Medicine, including Medical Anatomy and Mental Diseases. 2. Surgery. 3. Operative Surgery and Surgical Anatomy. 4. Ophthalmic and Aural Surgery. 5. Midwifery, including Diseases of Women and New-born Children, and the Theory and Practice of Vaccination.

Every Candidate must produce evidence that he has acted as Medical Clinical Clerk for three months, and as Surgical Dresser for three months.

Candidates are not admissible to the Final Examination earlier than the end of the Fifth Year of Medical Study.

Candidates may enter for and pass separately in Medicine, Surgery, and Midwifery.

Colonial Candidates who have taken out a portion of the Course, or have passed Examinations in Australia and elsewhere, have been accorded certain exemptions, which may be learned on application to the Secretary of the Committee of Management.

MARKING.

(*a*) A numerical system of marks, ranging from 0 to 10, is now in use.

(*b*.) A uniform standard of 50 per cent. is the passing mark in all subjects, and in all examinations.

(*c*.) In deciding as to whether a candidate has passed in any subject or not, the marks in all the divisions of the subject—written, oral, and practical—are considered together; provided, however, that bad answering in the clinical portion shall not be compensated for by excellence in the other portions of the subject.

EXEMPTIONS.

The analogous Examinations of the various Medical Licensing Bodies are, as a rule, accepted by the Conjoint Board as equivalent to the First, Second, and Third Professional Examinations; but credit will not, save in special cases, be given for separate subjects in which the Candidate has passed elsewhere.

The Entrance Examinations of the Universities, Intermediate Examinations, and Examinations of the College of Preceptors, or other Examinations in General Education recognised by the General Medical Council, are accepted in lieu of the Preliminary Examinations of the Colleges.

Lists of the Examinations which have been already accepted, and the value attached to them, are given in the Conjoint Regulations.

Candidates are referred for detailed information to the Official Regulations published by the Colleges.

MATRICULATION AS PUPIL OF THE ROYAL COLLEGE OF SURGEONS.

All persons proceeding to the study of Medicine may, if approved by the Council, become matriculated pupils of the College on payment of five guineas, and having done so, will enjoy the following privileges:—

1. They will, if matriculated before the preliminary examination, be admitted on payment of £1 1s. (half fee).
2. They will be permitted to study in the Library and Museums of the College.
3. Their fee for the First Professional Examination will be reduced by £5 5s.

DATES OF CONJOINT EXAMINATIONS.

Preliminary - - -	March and September.
Professional - - -	April, July, and October.

Fees for Courses of Study payable in the Dublin Schools and Hospitals for the Conjoint Examinations of the Royal Colleges of Physicians and Surgeons, Ireland:—

	£	s.
Three Courses Demonstrations and Dissections at £5 5s.	15	15
One Course Anatomical Lectures - - -	3	3
" " Lectures on Physiology - - -	3	3
" " Surgery - - - -	3	3
" " Theoretical Chemistry - - -	3	3
" " Materia Medica - - -	3	3
" " Practice of Medicine - - -	3	3

	£	s.
One Course Midwifery	3	3
„ „ Pathology	3	3
„ „ Physics	3	3
„ „ Practical Histology	5	5
„ „ Operative Surgery	5	5
„ „ Practical Chemistry	5	5
„ „ Public Health and Forensic Medicine	3	3
„ „ Practical Pharmacy	3	3
„ „ Biology	3	3
Total Fees for Lectures	£69	6
Fees for 27 months' Medico-Chirurgical Hospital attendance	37	16
Six months' Midwifery Hospital £6 6s., £8 8s, or	10	10
Three months' Ophthalmic Hospital	3	3
Three months' Mental Diseases	3	3
Vaccination	1	1
Total	£124	19

EXAMINATION FEES.

	For L.& L.M., R.C.P.I., and L. and L.M., R.C.S.I.		
First Professional Examination	£15	15	0
Second Professional Examination	10	10	0
Third Professional Examination	9	9	0
Final Professional Examination	6	6	0
Total	£42	0	0

We are indebted to *The Lancet*, Sept. 3, 1898, for the following Table, which we have revised and corrected in some minor points:—

Tabular List of the Classes, Lecturers, and Fees at the

Lectures, &c.	Dublin University	Dublin. R. C. of Surgeons		Dublin. Catholic University	
	Lecturers	Lecturers	Fees	Lecturers	Fees
Histology and Physiology	..	Prof. Scott	Course, £3 3s., in all Classes, ex. Descr. Anat. (£5 5s.), Oper. Surg. (£5 5s.), Pract. Chem. (£5 5s.), Pract. Histology (£5 5s.)	Dr. Coppinger and Dr. Coffey †	£3 3s. each Course, except Dissections, Pract. Chem., Oper. Surg., Histology, and Pub. Health, which are £5 5s. each.
Anatomy, Descriptive and Surgical	Dr. Cunningham	Prof. Fraser		Dr. Birmingham	
Practical Anatomy and Dissections	Dr. Cunningham	Prof. Fraser		Dr. Birmingham,† assisted by Drs. Fagan and Dempsey	
Chemistry - - -	Dr. Reynolds	Profs. Sir C. Cameron and Lapper		Dr. Campbell, assisted by Dr. Frengley	
Practical Chemistry	Dr. Reynolds				
Materia Medica and Pharmacy	Dr. W. G. Smith	Prof. Sir G. F. Duffey		Dr. Quinlan*	
Botany and Zoology -	Dr. Wright Prof. Mackintosh	Profs. Minchin and Cosgrave §		Dr. Sigerson † and Dr. Blaney	
Institutes of Medicine and Pathology	Dr. Purser	..		Dr. McWeeney	
Natural Philosophy -	Prof. FitzGerald	..		Prof. Stewart †	
Hospital Practice -	Sir P. Dun's or other Dublin Hospital	The various Dublin Hospitals		The various Dublin Hospitals	
Clinical Lectures -	..	..		..	
Surgery - - -	Dr. E. H. Bennett	Profs. Sir W. Stokes and W. Stoker		Mr. P. J. Hayes and Mr. McArdle	
Operative Surgery -	..				
Midwifery, &c. - -	Dr. A. V. Macan	Prof. S. R. Mason		Dr. A. J. Smith	
Medicine - - -	Dr. Finny	Prof. J. W. Moore		Sir C. J. Nixon	
Medical Jurisprudence -	Dr Bewley	Prof. Auchinleck		Mr. Roche	
Comparative Anatomy -	Prof. Mackintosh	..		Dr. Sigerson and Dr. Blaney †	
Practical Pharmacy -	Dr. W. G. Smith	Prof. Sir G. F. Duffey		Dr. Quinlan	
Logic - - -	The College Tutors	..		.. [*Medical Registrar*: Dr. Birmingham]	
Physics - - -	..	Prof. Lapper		Prof. Stewart †	
Pathology - - -	Mr. O'Sullivan	Mr. Arthur H. White		Dr. McWeeney	
Ophthalmology and Otology	..	Profs. Jacob, Fitzgerald, and Story		Dr. Werner	
Hygiene - - -	Dr. Bewley	Sir Charles Cameron		Mr. Roche	

* In Summer. † In Winter and in Summer

Medical Schools of Ireland for the Session 1898–99.

BELFAST QUEEN'S COLLEGE			CORK QUEEN'S COLLEGE			GALWAY QUEEN'S COLLEGE		
Lecturers	Fees First Course		Lecturers	Fees First Course		Lecturers	Fees First Course	
	£	s.		£	s.		£	s.
Dr. W. H. Thompson	3	0	Dr. J. J. Charles	3	0	Dr. Pye	3	0
Dr. J. Symington	2	0		..		Dr. Pye	2	0
Dr. Symington and Demonstrators	3	0	Dr. Charles and Demonstrators	3	0	Dr. Pye and Demonstrators.	3	0
Dr. Letts	2	0	Dr. Augustus E. Dixon	2	0	Dr. Senier	2	0
Dr. Letts†	3	0	Dr. Augustus E. Dixon	3	0	Dr. Senier	3	0
Dr. W. Whitla	2	0	Dr. C. Y. Pearson	2	0	Dr. Colahan	2	0
Dr. R. O. Cunningham‡	2	0	Professor Hartog	2	0 each	Dr. R. J. Anderson	2	0
..	..		..	..		Dr. Lynham	2	0
Prof. W. B. Morton	2	0	Prof. William Bergin	2	0	Professor Anderson	2	0
Belfast Royal and other Hospitals	..		North and South Infirmaries	..		Galway Hospital, Galway Union Hospital, and Galway Fever Hospital	Sess. 5	0
..	..		..	..		Drs. Kinkead, Pye, Brereton, Colahan, and Lynham	..	
Dr. Sinclair	2	0	Dr. S. O'Sullivan	2	0	Dr. W. Brereton	2	0
Dr. Sinclair*	2	0	Dr. S. O'Sullivan	2	0	..	..	
Dr. J. W. Byers	2	0	Dr. Corby	2	0	Dr. Kinkead	2	0
Dr. Cuming	2	0	Dr W. E. Ashley Cummins	2	0	Dr. Lynham	2	0
Dr. Hodges	2	0	Dr. C. Yelverton Pearson	2	0	Dr. Senier Dr. Kinkead	2	0
..	..		..	..		[*Modern Languages:* Professor Steinberger]	..	
Dr. V. G. L. Fielden	2	0	Dr. C. Yelverton Pearson	..		..	2	0
Professor J. Park	2	0	Professor Stokes	1	0	Mr. Starkie	2	0
..	..		..	..		..	..	
Dr. J. Lorrain Smith	2	0	Dr. Cotter	2	0	Dr. Lynham	2	0
Dr. W. A. M'Keown	2	0	Dr. Sandford	..		..	..	
Dr. E. A. Letts and Dr. Henry Whitaker	2	0	Dr. Donovan	..		..		

‡ Zoology in Winter; Botany in Summer.

Including Biology.

REGULATIONS FOR CANDIDATES FOR THE CONJOINT DIPLOMA IN STATE MEDICINE.

The following regulations are compulsory on all Candidates beginning the study of Sanitary Science after January 1st, 1894; the date of commencement of study being fixed by the date of the certificates.

Stated Examinations for the Diploma in State Medicine commence on the first Tuesday of the months of February, May, and November, and occupy four days.

A special Examination for the Diploma can be obtained—except in the months of August and September—on payment of £5 5s., in addition to the ordinary Fees mentioned below, and on giving notice at least one fortnight before the date of the proposed Examination.

Every Candidate for the Diploma in State Medicine must be a Registered Medical Practitioner. He must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, Dublin, three weeks before the Examination, and lodge with him a Testimonial of Character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh, together with certificates of study as hereinafter set forth.

Candidates registered as Medical Practitioners or entitled to be so registered after 1st January, 1890, must comply with the following Resolutions passed by the General Medical Council on December 1st, 1893, in regard to Diplomas in State Medicine:—

"(*a*) This Council, having regard to the terms of Section 18 of the Local Government Act, 1888, and observing that under that section special privilege is to be accorded to the holders of the Diplomas granted under Section 21 of the Medical Act (1886), and therein described as Diplomas in Sanitary Science, Public Health, or State Medicine, thinks it essential to declare, with regard to its own future action under Section 21 of the Medical Act (1886), that it will not consider Diplomas to 'deserve recognition in the *Medical Register*' unless they have been granted under such conditions of education and examination as to insure (in the judgment of the Council) the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the Public Health; and that the Council, in forming its judgment on the conditions of education and examination, will expect the following rules to have been observed:—

"(*b*) A period of not less than twelve months shall elapse between the attainment of a first registrable qualification in Medicine, Surgery, and Midwifery, and the admission of the Candidate to any examination, or any part thereof, for a Diploma in Sanitary Science, Public Health, or State Medicine.

"(*c*) Every Candidate shall have produced evidence of having, after obtaining a registrable qualification, attended during six months' practical instruction in a Laboratory or Laboratories, British or Foreign, approved by the Body granting the Diploma, in which Chemistry, Bacteriology, and the Pathology of the Diseases of Animals transmissible to Man are taught.

"(*d*) Every Candidate shall have produced evidence that, during a period of six months after obtaining a registrable Qualification, he has either practically studied the duties of outdoor sanitary work, under the Medical Officer of Health of a County or large Urban District, or else has himself held an appointment as Medical Officer of Health under conditions not requiring the possession of a Special Sanitary Diploma. The Certificate of an Assistant Officer of Health of a County or a large Urban District may be accepted, provided the Medical Officer of Health of the County or District consents to the Assistant Officer giving such instruction.

"(*e*.) Every Candidate shall have produced evidence that he has attended the Clinical Practice of a Hospital for Infectious Diseases recognised by one of the Licensing Bodies; provided that such a course of instruction may have been taken as part of the Curriculum, for his registrable Qualification in Medicine, Surgery, and Midwifery.

"(*f*) The Examination shall have been conducted by Examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a Laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a Medical Officer of Health."

⁂ The *Rules* as to study shall not apply to—

"(α) Medical Practitioners registered, or entitled to be registered, on or before January 1, 1890:

"(β) Registered Medical Practitioners who have for a period of three years held the position of Medical Officer of Health of any County, or to any Urban District of more than 20,000 inhabitants, or to any entire Rural Sanitary District."

These *Rules* shall apply to all Diplomas granted after January 1, 1894, provided that the *Rules* passed by the Council on June 1, 1889, and November 25th, 1890, shall continue to apply to Candidates who had commenced special study in Sanitary Science prior to January 1, 1894.

⁂ The Executive Committee [of the General Medical Council] has power, in special cases, to admit exceptions to the Rules for the Registration of Diplomas in Sanitary Science, and report the same to the General Council.

The Fee for the Examination is Ten Guineas, which must be lodged in the Ulster Bank, Dublin, to the credit of the Committee of Management, at least two weeks before the date fixed for the Examination. Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. The Fee for re-examination is Five Guineas.

The Examination for the Diploma in State Medicine comprises the following subjects:—State Medicine and Hygiene, Chemistry, Meteorology, and Climatology, Engineering, Morbid Anatomy, Vital Statistics, Medical Jurisprudence, Law.

IV.

APOTHECARIES' HALL IN IRELAND.

The First, Second, and Third Professional Examinations are held four times a year—viz., commencing the third Monday in January, April, July, and October.

The final Examinations are held in January and July.

The Fees payable for each Examination are as follows:—

First Professional	- -	£5	5	0
Second „	- -	5	5	0
Third „	- -	5	5	0
Final Examination	- -	6	6	0

Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. If a Candidate gives three clear days' notice of inability to attend, he may present himself at the remaining Examination without any further fee.

A Candidate is allowed for each Professional Examination which he has completed at any other Licensing Body, except the Final. If he has passed only in some of the subjects in a given Examination, he has to pay the whole of the fee for that Examination. The fees for re-examination are

For each subject	- -	£1	1	0

excepting in the subjects of Chemistry, Pharmacy, Surgery, and Medicine, the fees for which are £2 2s. each.

The fee for Final alone	- -	£15	15	0

When the other Examinations have been taken elsewhere.

Ladies who comply with the regulations will be admitted to these examinations.

Candidates may be admitted to a Special Examination, under special circumstances, which must be laid before the Examination Committee. If the Candidate's application be granted, an extra fee of Ten Guineas over and above the full fee is required.

Candidates already on the Register will receive the Diploma of the Hall, on passing an Examination in the subjects which are not covered by their previous qualifications, and on paying a fee of Ten Guineas. If Medicine or Surgery is required, Two Guineas extra will be charged.

All examination Fees are to be lodged in the Sackville-street Branch of the Royal Bank of Ireland, to the credit of the Examination Committee. Applications and Schedules, together with Bank Receipt for the fee, must be lodged with the Registrar, Apothecaries' Hall, 40 Mary-street, Dublin, fourteen clear days before the first day of Examination.

COURSE OF STUDY FOR THE DIPLOMA.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must, before proceeding to the Final Examination, produce evidence of having been registered as a Medical Student for 57 months; also of having attended Courses of Instruction as follows:—

Winter Courses of Six Months.

One Course each of the following:—

Anatomy (Lecture).
Chemistry—Theoretical.
Midwifery.
Practice of Medicine.
Physiology, or Institutes of Medicine.
Surgery.
Dissections, two courses of six months each.

Courses of Three Months.

One Course of each of the following:—

Materia Medica.
Medical Jurisprudence.
Chemistry—Practical.
Practical Physiology and Histology.
Operative Surgery.
Physics.

Clinical Ophthalmology.
Biology.
Clinical Instruction in Mental Disease.
Pathology.
Vaccination.

Medico-Chirurgical Hospital, twenty-seven months, to be distributed at the Student's own discretion over the last four years of his study. The Candidate may substitute for nine months in this Hospital Attendance six months as a Resident Pupil. He will be required to present a certificate of having taken notes of at least six Medical and six Surgical cases recorded under the supervision, respectively, of a Physician and Surgeon of his Hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of five cases of Fever—viz., either Typhus, Typhoid, Scarlet Fever, Small-pox or Measles.

Six months' Practical Midwifery and Diseases of Women during the Winter or Summer of the third or the fourth year, at a recognised Lying-in Hospital, or Maternity.

Three months' Practical Pharmacy, in a recognised Clinical Hospital or a recognised School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each Candidate, before receiving his Diploma, must produce evidence that he has attained the age of twenty-one years.

EXAMINATIONS FOR THE DIPLOMA.

All information relative to the Examinations may be obtained from the Registrar of the Apothecaries' Hall, 40 Mary-street, Dublin, who will receive the applications of Candidates, and with whom the Bank receipt for lodgment of fees, together with all certificates, must be lodged at least fourteen days prior to the day fixed for the commencement of the Examination for the class to which each Candidate belongs.

DENTAL EDUCATION AND EXAMINATIONS IN IRELAND.[a]

The Royal College of Surgeons in Ireland grants Diplomas in Dental Surgery under conditions of which the following is a synopsis:—

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[a] Fuller particulars can be obtained by application to the Registrar, Royal College of Surgeons, St. Stephen's-green, Dublin.

The Candidate must be twenty-one years of age.

The Candidate must have passed three Examinations.

1. Preliminary (identical with the Medical Preliminary).
2. Primary Dental. Fee, £10 10s. (This Examination is much the same as the Second Conjoint Professional.)
3. Final Dental Examination. Fee, £10 10s. Candidates are examined in Dental Surgery and Pathology, and in Mechanical Dentistry and Practical Metallurgy.

   Candidates are required to do gold fillings, and construct mechanical work in the presence of the Examiners.

The Certificate required may be divided into General and Special.

1. The General Certificates required are about the same as those required by the Medical Student for the Second Conjoint Professional Examination.

The Special Certificates may be subdivided into—

1. Dental Hospital. 2. Practical Mechanical Dentistry.
   1. Dental Hospital. Two years' attendance, with Lectures in Dental Surgery and Pathology and in Mechanical Dentistry and Orthodonty. Fee, £28 7s.
   2. Practical Mechanical Dentistry. Three years' instruction from a Registered Dentist. The fee for this is variable, but may be set down at from £50 to £150.

Large reductions in the Special Certificates required are made in the cases of qualified Medical Practitioners.

EARLY PATHOGNOMONIC SIGN OF MEASLES.

Dr. Henry Koplik, of New York, describes (Archives of Pædiatrics) an aid in the diagnosis of measles, which has received scant attention from writers on this subject. He says that there is nothing especially distinctive about the eruption in the pharynx, or in the hard or soft palate in measles. On the buccal mucous membrane and the inside of the lips, however, a distinct eruption is invariably seen. It consists of small, irregular spots of a bright red colour. In the centre of each spot there is noted, in strong daylight, a minute, bluish-white speck. These red spots, with accompanying specks of a bluish-white colour, are absolutely pathognomonic of beginning measles, and, when seen, can be relied upon as the forerunner of the skin eruption.—*The Medical Standard.*

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—**Edward H. Bennett**, M.D., F.R.C.S.I.
General Secretary—**John B. Story**, M.B., F.R.C.S.I.

SECTION OF OBSTETRICS.

President—F. W. Kidd, M.D.
Sectional Secretary—John H. Glenn, M.D.

Friday, 27th April, 1898.

The President in the Chair.

Specimens.

Dr. W. J. Smyly.—Myomatous uterus removed by panhysterectomy.

The **President** asked what age was the patient. He thought that pain, hæmorrhage, rapidity of growth, or if the tumour prevents the patient from earning her livelihood, were the conditions justifiable for removing such a tumour. He had seen several cases of tumours as large as this, and the same irritability of bladder was the only symptom, and was permanently relieved by pushing up the tumour and inserting a pessary. He had seen such tumours disappear after the climacteric period was passed.

Dr. Smyly, replying, said he considered it by no means necessary to remove every myomatous tumour, nor the majority. The indication for operation in this case was that the patient could not follow her occupation as a cook. He thought a hysterectomy better than having to have a catheter passed often.

Dr. E. Hastings Tweedy.—Ovarian cyst of the right ovary removed by cœliotomy.

Dr. R. D. Purefoy.—Case of myomatous uterus.

Clinical Report of Rotunda Lying-in Hospital, 1896–7.

Dr. R. D. Purefoy read this Report. [It will be found in Vol. CV., page 465.]

Dr. Macan said that, as an old Master, he would like to offer his congratulations to Dr. Purefoy upon the success of his first year. He did not agree with Dr. Purefoy in his four hours' teaching of putting on forceps in the second stage. He thought that every student should be given absolute indications for putting on forceps. If the head was already far down in the pelvis, the os fully dilated, the occiput turned towards the front, and the outlet not very narrow, the forceps would do no harm. Most authorities now recognised that the application of the forceps is a bloody operation; there is a good deal of tearing and hæmorrhage caused by them. Regarding the case recorded where a woman had four dead-born children, the fifth a breech and living child, and now in sixth labour, he himself would have turned it into a breech instead of performing perforation and craniotomy. As regards rupture of the uterus, it was sometimes caused by attempting to pass in the hand in case of a shoulder presentation when the child was dead. As regards morbidity, the limit of normal during his Mastership was 100·4, instead of 100·8 as at present. The total monthly morbidity was given, but not the percentage of the cases, and, therefore, it did not help much unless the number of patients delivered in the month was stated. He saw in the Report no mention of cases of accidental hæmorrhage where the membranes were ruptured. Such cases were very troublesome, and difficult to treat. Cases where the membranes were still intact were treated by plugging the vagina, and perhaps even the cervix, but in the serious cases plugging would only increase the internal hæmorrhage. Nor would the application of a tight abdominal band and a vaginal plug be sufficient. He was tolerably content with the treatment of eclampsia by chloroform and chloral hydrate in large doses. There was no objection against morphia as well. In the reported case where morphia was given by Dr. Purefoy, why was not more morphia still given, seeing that the patient was maniacal? He thought that the essential treatment by morphia was to give very large doses so as to prevent convulsions; three grains a day might be given. Regarding incubators, Anvard's, and afterwards Hearson's, were used in the Rotunda. He asked what were the modern improvements in incubators?

Dr. A. Smith said that in the application of forceps the time test was very limited and begs the question; the condition of the parts must be normal. The proper tests were conditions on the part of the mother and conditions on the part of the child. If the mother's temperature was raised, and pulse quick, or if the child showed pressure effects, such as quickening or slowing of heart, and meconium passing away, with vertex presenting, the forceps should be used. In the Report it was an interesting point that in each case of accidental hæmorrhage strong labour pains were present. The patients had strong labour pains, or the pains came on after treatment, such as plugging. Was the plugging in these cases the cause of strong labour pains or not? In the case of eclampsia he did not think that the morphia had been administered in the proper method, nor was it Veit's method.

DR. SMYLY was struck at the steady increase in the deliveries in the Rotunda. There was also a decrease in the mortality, mainly due to antisepsis and asepsis, but also due to the discipline in the hospital. Results in private practice were not at all commensurate with those in hospital practice, chiefly, he thought, due to the rules being carried out in a perfunctory manner. Regarding mortality, in contrast to the results of late years, he read the following from an old Rotunda Hospital Report:—

In 1869 there were 1,159 deliveries with 25 deaths.
„ 1870 „ 1,087 „ 27 „
„ 1871 „ 1,161 „ 33 „
„ 1872 „ 1,193 „ 20 „
„ 1873 „ 1,191 „ 32 „
„ 1874 „ 1,236 „ 15 „

The indication for the use of forceps was a very great difficulty. If everything was favourable, it was cruelty to leave the woman to suffer longer than was necessary. He believed that in rupture of the uterus the classical symptoms were frequently absent, giving one remarkable case to illustrate this. He had never found rise of temperature much of an indication for the use of forceps, as rises of temperature were generally due to vaginal examinations. He did not see why a macerated fœtus should cause a rise of temperature as stated in the Report.

DR. E. HASTINGS TWEEDY was glad that Dr. Purefoy was against the use of the curette in the treatment of abortion, as advocated by one speaker at the last meeting. The curette was apt to scrape away the muscular tissue and leave placental tissue behind.

The PRESIDENT said that formerly the fact of a man being master of a lying-in hospital was against his private practice on account of his being daily in touch with septic cases. Now, however, as shown by statistics, a lying-in hospital was the safest place for a woman to be delivered in. He thought there was some serious mismanagement in connection with private cases, probably because the nurse did not carry out the rules as she would under a matron in hospital. With regard to the use of forceps he would steer a middle course and would not adopt the four-hour system, nor would he leave a woman in labour for 36 or 48 hours, simply because no indication arose. Certainly it destroyed the patient's powers of resistance. Regarding the removal of retained membranes, not accompanied by hæmorrhage, he thought it better not to introduce the hand to remove such.

DR. PUREFOY, in reply, said that he did not adhere very strictly to the four hours second stage limit, and the application of forceps was carried out with due regard to the other conditions present. Laceration and subsequent hæmorrhage were not so frequent as Dr. Macan led one to believe. He believed that lesser degrees of rupture of uterus occur which pass unobserved at the time. Regarding the particular case of rupture of uterus reported, the patient was carefully watched, and the fact that she had been delivered on a previous occasion gave him hope that by allowing time for the head to mould, the patient would be all right. The process of rupture is very slow in such cases, and until the tissues are actually worn through, serious collapse does not arise. Regarding morbidity and range of temperature, he believed that the range of temperature was that accepted in other institutions, and was that accepted in Winckel's book. Concerning accidental hæmorrhage he fully agreed with Dr. Macan. In bad cases he thought he would use a tampon, in order to excite uterine action. The best treatment of such cases was, he thought, still an open question. He thought chloroform in the treatment of eclampsia more valuable than Dr. Smyly was inclined to admit. Venesection in some cases was useful. He rather dreaded chloral hydrate in the doses commonly recommended. If he used morphia he gave first of all a large dose, and a somewhat smaller dose repeated in about two hours, or a shorter interval if the symptoms were severe. If the first dose ameliorated symptoms, the second dose was postponed. In the recorded case no eclamptic seizures occurred after the administration of morphia, and the maniacal condition was not formidable to life. He thought that an elevation of temperature occurred tolerably often in cases of macerated fœtus.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four weeks ending Saturday, August 14, 1898.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Average Rate for 4 weeks	Towns	Weeks ending				Average Rate for 4 weeks
	July 23	July 30	Aug. 6	Aug. 13			July 23	July 30	Aug. 6	Aug. 13	
23 Town Districts	21·3	20·1	21·2	22·7	21·3	Limerick -	28·1	18·2	19·6	23·9	22·4
Armagh -	28·5	0·0	21·4	0·0	12·5	Lisburn -	17·0	17·0	8·5	21·3	16·0
Ballymena	16·9	22·5	16·9	5·6	15·5	Londonderry	29·8	12·6	9·4	20·4	18·1
Belfast -	24·3	19·2	28·2	21·4	23·3	Lurgan -	4·6	13·7	9·1	22·8	12·6
Carrickfergus	11·7	5·8	11·7	11·7	10·2	Newry -	8·1	12·1	8·1	12·1	10·1
Clonmel -	19·5	9·7	9·7	4·9	11·0	Newtownards	11·3	17·0	11·3	39·7	19·8
Cork -	21·5	18·0	8·3	22·8	17·7	Portadown	12·4	12·4	37·1	30·9	23·2
Drogheda -	19·0	26·6	3·8	26·6	19·0	Queenstown	0·0	17·2	11·5	23·0	12·9
Dublin -	21·6	23·0	23·4	24·6	23·1	Sligo -	35·5	25·4	20·3	30·5	27·9
Dundalk -	4·2	25·1	16·8	16·8	15·7	Tralee -	5·6	11·2	39·2	39·2	23·8
Galway -	0·0	41·5	11·3	22·7	18·9	Waterford	13·9	8·0	11·9	19·9	13·4
Kilkenny -	28·3	18·9	4·7	28·3	20·1	Wexford -	13·5	54·2	18·1	31·6	29·3

In the week ending Saturday, July 23, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 15·4), was equal to an average annual death-rate of 15·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·1 per 1,000. In Glasgow the rate was 21·8. In Edinburgh it was 19·7.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 21·3 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in fourteen of the districts to 6·2 in Portadown—one of the two deaths from all causes registered in that district having been caused by diarrhœa. Among the 142 deaths from all causes in Belfast are 1 from measles, 2 from whooping-cough, 9 from enteric fever, and 13 from diarrhœa. The Registrars of Nos. 1 and 3 Districts, Limerick, report that measles is epidemic in their districts.

In the Dublin Registration District the registered births amounted to 174—90 boys and 84 girls; and the registered deaths to 152—78 males and 74 females.

The deaths, which are one under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·7 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 21·6 per 1,000. During the twenty-nine weeks ending with Saturday, July 23, the death-rate averaged 27·2, and was 1·2 under the mean rate in the corresponding period of the ten years 1888-1897.

The number of deaths from zymotic diseases registered was 16, being 11 over the low number for the preceding week, but 10 under the average for the twenty-ninth week of the last ten years. The 16 deaths comprise 1 from scarlet fever (scarlatina), 1 from influenza, 5 from whooping-cough, 1 from diphtheria, 1 from enteric fever, 1 from choleraic diarrhœa, and 4 from diarrhœa.

The weekly number of cases of scarlatina admitted to hospital, which had fallen from 18 in the week ended July 9th to 11 in the following week, further declined to 7. Fifteen scarlatina patients were discharged, one died, and 80 remained under treatment on Saturday, being 9 under the number in hospital at the close of the preceding week. In addition, 16 convalescents remained at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The number of cases of enteric fever admitted to hospital was 17, being 9 under the admissions in the preceding week, and 7 under the number admitted in the week ended July 9. Nine patients were discharged, 2 died, and 81 remained under treatment on Saturday, being 6 over the number in hospital on that day week.

The hospital admissions included, also, 2 cases of diphtheria, and 2 of measles: 8 cases of the former disease and 2 of the latter remained under treatment on Saturday.

Deaths from diseases of the respiratory system, which had risen from 18 in the week ended July 9 to 21 in the following week, further rose to 31, or 11 over the average for the corresponding week of the last ten years. The 31 deaths comprise 10 from bronchitis and 18 from pneumonia.

In the week ending Saturday, July 30, the mortality in thirty-three large English towns, including London (in which the rate was 16·8), was equal to an average annual death-rate of 17·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·6 per 1,000. In Glasgow the rate was 19·3, and in Edinburgh it was 19·7.

The average annual death-rate in the twenty-three principal town districts of Ireland was 20·1 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·8 per 1,000, the rates varying from 0·0 in seventeen of the districts to 11·3 in Ballymena—the 4 deaths from all causes registered in that district comprising 1 from diphtheria and 1 from enteric fever. Among the 112 deaths from all causes in Belfast are 1 from measles, 3 from whooping-cough, 1 from diphtheria, 3 from simple continued and ill-defined fever, 5 from enteric fever, and 20 from diarrhœa. The 13 deaths for Limerick comprise 1 from measles and 3 from whooping-cough.

In the Dublin Registration District the registered births amounted to 183—87 boys and 96 girls; and the registered deaths to 160—76 males and 84 females.

The deaths, which are 4 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·9 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 23·0 per 1,000. During the first thirty weeks of the present year the death-rate averaged 27·1, and was 1·1 under the mean rate in the corresponding period of the ten years 1888-1897.

The number of deaths from zymotic diseases registered was 19, being 3 over the number for the preceding week, but 6 under the average for the 30th week of the last ten years. The 19 deaths comprise 1 from scarlet fever (scarlatina), 1 from diphtheria, 1 from cerebro-spinal meningitis, 3 from enteric fever, 1 from simple cholera, 9 from diarrhœa and 1 from erysipelas.

As in the week preceding, 7 cases of scarlatina were admitted to hospital. Fourteen scarlatina patients were discharged, 1 died, and 72 remained under treatment on Saturday, being 8 under the number in hospital at the close of the preceding week. There was, besides, 20 convalescents at Beneavin, Glasnevin.

The weekly number of cases of enteric fever admitted to hospital further declined to 8. Eleven patients were discharged, 3 died, and 75 remained under treatment on Saturday, being 6 under the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 26, being 5 under the number for the preceding week, but 7 over the average for the 30th week of the last ten years. The 26 deaths consist of 16 from bronchitis, 9 from pneumonia, and 1 from pleurisy.

In the week ending Saturday, August 6, the mortality in thirty-three large English towns, including London (in which the rate was 18·3), was equal to an average annual death-rate of 18·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·0 per 1,000. In Glasgow the rate was also 20·0, and in Edinburgh it was 18·3.

The average annual death-rate in the twenty-three principal town districts of Ireland was 21·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 4·0 per 1,000, the rates varying from 0·0 in thirteen of the districts to 16·8 in Tralee—the 7 deaths from all causes registered in that district comprising 2 from typhus and 1 from whooping-cough. Among the 165 deaths from all causes in Belfast are 1 from measles, 1 from whooping-cough, 16 from enteric fever, and 18 from diarrhœa. Among the 14 deaths in Limerick are 2 from measles, 2 from whooping-cough, and 1 from diarrhœa. The 3 deaths in Ballymena comprise 1 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 227—108 boys and 119 girls; and the registered deaths to 160—86 males and 74 females.

The deaths, which are 11 over the average number for the corresponding week for the last ten years, represent an annual rate of mortality of 23·9 in every 1,000 of the population.

Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 23·4 per 1,000. During the thirty-one weeks of the current year the death-rate averaged 27·0, and was 1·0 under the mean rate in the corresponding period of the ten years 1888-1897.

Twenty-nine deaths from zymotic diseases were registered, being 4 in excess of the average for the corresponding week of the last ten years, and 10 over the number for the previous week. They comprise 1 from scarlet fever (scarlatina), 2 from whooping-cough, 1 from diphtheria, 5 from enteric fever, 1—in the Richmond District Lunatic Asylum—from béri-béri, and 18 from diarrhœa. Sixteen of the 18 deaths from diarrhœa were of children under 5 years of age, 12 being deaths of infants under one year old.

Eleven cases of scarlatina were admitted to hospital, against 7 admissions in each of two weeks preceding. Sixteen scarlatina patients were discharged, 1 died, and 66 remained under treatment on Saturday, being 6 under the number in hospital on that day week. There were, in addition, 20 convalescents at Beneavin, Glasnevin.

The weekly number of cases of enteric fever admitted to hospital rose to 46; 17 patients were discharged, 1 died, and 109 remained under treatment on Saturday, being 28 over the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system declined to 20, but this number is 4 over the average for the corresponding week of the last ten years. The 20 deaths consist of 15 from bronchitis, 4 from pneumonia, and 1 from pleurisy.

In the week ending Saturday, August 13, the mortality in thirty three large English towns, including London (in which the rate was 20·5), was equal to an average annual death-rate of 20·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·8 per 1,000. In Glasgow the rate was 20·8 per 1,000, and in Edinburgh it was 19·2.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 22·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 3·8 per 1,000, the rates varying from 0·0 in twelve of the districts to 16·8 in Tralee—the 7 deaths from all causes registered in that district comprising 2 from typhus and 1 from whooping-cough. Among the 125 deaths from all causes in Belfast are 2 from whooping-cough, 8 from enteric fever, and 19 from diarrhœa. The 17 deaths in Limerick comprise 2 from measles and 1 from whooping-cough. The Registrar of Belfast No. 9 District remarks—"Typhoid fever again becoming prevalent. Upwards of 20 cases notified in Ligoniel during past 14 days."

In the Dublin Registration District the registered births amounted to 282—145 boys and 137 girls; and the registered deaths to 171—89 males and 82 females.

The deaths, which are 20 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·5 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 24·6 per 1,000. During the first thirty-two weeks of the current year the death-rate averaged 26·9, and was 1·0 under the mean rate in the corresponding period of the ten years 1888-1897.

Deaths from zymotic diseases rose to 37, or 6 over the average for the corresponding week of the last ten years. The 37 deaths comprise 1 from varicella (chicken-pox), 3 from scarlet fever (scarlatina), 2 from influenza and its complications, 5 from whooping-cough, 1 from diphtheria, 3 from enteric fever, 18 from diarrhœa, 1 from dysentery, and 1 from erysipelas. Sixteen of the 18 deaths from diarrhœa were of children under 5 years of age, 12 being deaths of infants under 1 year old.

Sixteen cases of scarlatina were admitted to hospital, against 11 in the preceding week and 7 in the week ended July 30. Nineteen scarlatina patients were discharged and 63 remained under treatment on Saturday, being 3 under the number in hospital at close of the preceding week. There were also 17 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 28, being 18 under the admissions in the preceding week, but 20 over the number admitted in the week ended July 30. Thirty-one patients were discharged, 1 died, and 105 remained under treatment on Saturday, being 4 under the number in hospital on that day week.

The hospital admissions included, also, 3 cases of measles. Eight cases of this disease remained under treatment in hospital on Saturday.

Twenty-three deaths from diseases of the respiratory system were registered, being 10 over the average for the corresponding week of the last ten years, and 3 over the number for the previous week. They consist of 15 from bronchitis and 8 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of August,* 1898.

Mean Height of Barometer,	29·964 inches.
Maximal Height of Barometer (on 31st, 9 p.m.),	30·308 ,,
Minimal Height of Barometer (on 5th, 6 p.m.),	29·531 ,,
Mean Dry-bulb Temperature,	60·2°
Mean Wet-bulb Temperature,	56·9°.
Mean Dew-point Temperature,	53·9°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·419 inch.
Mean Humidity,	80·5 per cent.
Highest Temperature in Shade (on 5th),	75·4°
Lowest Temperature in Shade (on 9th),	47·2°
Lowest Temperature on Grass (Radiation) (on 9th),	41·8°.
Mean Amount of Cloud,	56·3 per cent.
Rainfall (on 18 days),	3·456 inches.
Greatest Daily Rainfall (on 25th).	·991 inch.
General Directions of Wind,	W., N.W., S.S.W.

Remarks.

Like August, 1897, this was a changeable, showery, windy, but warm month. In the south and south-east of England great heat prevailed in the middle of the month, which was broken and rainy in Ireland. Thunder and lightning of unusual intensity occurred in the S.W. and S. of Ireland on the 18th and 21st. The wind was often high and squally.

In Dublin the arithmetical mean temperature (61·4°) was decidedly above the average (59·7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 60·2°. In the thirty-three years ending with 1897, August was coldest in 1881 (M. T.=57·0°), and warmest in 1893 (M. T.= 63·0°). In 1897 the M. T. was 60·8°; in 1879 (the "cold year") it was 57·7°.

The mean height of the barometer was 29·964 inches, or 0·067 inch above the corrected average value for August—namely, 29·897 inches. The mercury marked 30·308 inches at 9 p.m. of the 31st, and fell to 29·531 inches at 6 p.m. of the 5th. The observed range of atmospheric pressure was, therefore, 0·777 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 60·2°. It was exactly equal to the value for July, 1898. Using the formula, *Mean Temp.* = *Min.* + (*max.* − *min.* × ·47), the mean temperature was 61·0°, or

1·7° above the average mean temperature for August, calculated in the same way, in the twenty-five years, 1865–89, inclusive (59·3°). The arithmetical mean of the maximal and minimal readings was 61·4°, compared with a twenty-five years' average of 59·7°. On the 5th the thermometer in the screen rose to 75·4°—wind, W.S.W.; on the 9th the temperature fell to 47·2°—wind, N.W. The minimum on the grass was 41·8°, also on the 9th.

The rainfall was 3·456 inches, distributed over 18 days. The average rainfall for August in the twenty-five years, 1865–89, inclusive, was 2·825 inches, and the average number of rainy days was 15·5. The rainfall, therefore, and the rainy days, were considerably in excess of the average. In 1874 the rainfall in August was very large—4·946 inches on 18 days; in 1868, also, 4·745 inches fell on, however, only 13 days; but the heaviest downpour in August occurred in 1889, when 5·747 inches were registered on 22 days. On the other hand, in 1884, only ·777 inch was measured on 8 days. In 1897, 3·788 inches fell on 24 days.

High winds were noted on as many as 12 days, and attained the force of a gale on four occasions in Dublin—the 2nd, 5th, 28th and 30th. Thunder occurred on the 21st, lightning on the 7th, 15th and 21st. Temperature reached 70° in the screen on 9 days. Solar halos were seen on the 7th and 9th. The atmosphere was foggy on the 19th, 20th, 21st and 26th.

During the period ended Saturday, the 6th, the weather was much less settled in Ireland than it had been for several weeks past. Strong and squally westerly winds prevailed and rain fell abundantly on Wednesday, Thursday, and Friday. On the morning of the last-named day the wind blew a gale, and on Tuesday also the wind reached gale force at times. On and after Monday, the 1st, there was a general reduction of atmospheric pressure over north-western Europe, and gradients for westerly (between S.W. and N.W.) winds remained steep until Saturday, the 6th. Accordingly the weather was unsettled and blustering, particularly on Friday, when gales prevailed both in the Irish Sea and in St. George's and the English Channels. Great warmth accompanied the gale of Friday, and as the air was damp at the same time, the weather was oppressive. In Dublin the thermometer rose to 75·4° during the gale. Large quantities of rain fell in Ireland and the North of England on Wednesday and the two following days. On Friday morning a cyclonic centre lay over Antrim, moving northeastwards. To this system the gales and rain of Friday were due. The arrival of a subsidiary or secondary depression on Saturday in more southern latitudes equalised pressure and caused a fine day in

Ireland. In Dublin the barometer ranged from 30·128 inches at 9 a.m. of Monday (wind, W.) to 29·581 inches at 6 p.m. of Friday (wind, W.S.W.). The screened thermometers rose to 75·4° on Friday and fell to 52·5° on Thursday. Westerly winds prevailed and were often strong and squally. The rainfall on four days amounted to 1·103 inches, ·409 inch being measured on Thursday.

High winds, heavy rains, and spells of fine hot weather made up the record of the week ended Saturday, the 13th. Sunday was fine until evening, when there were heavy showers and some lightning was seen. At night a cyclonic system advanced to Brittany from the westward. This disturbance subsequently travelled across the North of France, Belgium, and Holland to Denmark. In its passage it caused very heavy rains in England and on the Continent, and thunder and lightning occurred in some localities in Great Britain. A cold night was experienced in Ireland on Tuesday and a few hours later a new depression brought heavy rain and strong, squally S. to S.W. winds to Ireland and Scotland. At 8 a.m. of Wednesday the barometer was down to 29·46 inches in the Hebrides. An anticyclone now formed over Germany, spreading westward across the S. of England. The weather became fine and warm and so remained until Friday, when another rainstorm passed over Ireland from S. to N. At this time the thermometer ranged very high in Great Britain, rising to 80° in London and at Cambridge on Thursday, and to 85° in these places on Friday. Saturday was fair and warm in Dublin and its vicinity. The mean height of the barometer was 29·914 inches, pressure rising to 30·163 inches at 9 a.m. of Tuesday (wind, N.W.) and fállING to 29·676 inches at 5 30 p.m. of Friday (wind, S.S.W.). The corrected mean temperature was 60·9°. The mean dry-bulb temperature at 9 a.m. and 9 p.m. was 60·2°. The screened thermometers fell to 47·2° on Tuesday and rose to 73·1° on Saturday. The rainfall was ·866 inch on five days, ·413 inch being registered on Tuesday. The prevailing winds were S.W. and N.W. They were often strong in force and squally. Solar halos were seen on Sunday and Tuesday.

The words "warm but unsettled" best describe the weather of the week ended Saturday, the 20th. There were no large or deep atmospheric depressions, but the barometer was unsteady, and shallow "thunderstorm depressions" formed from time to time. In the earlier part of the week the irregularities in pressure were most marked over France and England. Very little rain fell in the London district, where the heat was almost tropical, the thermometer in the shade rising to 85° on Sunday, 87° on Monday, and 83° on Tuesday. On Monday night faint sheet lightning was seen frequently on the extreme S.E. horizon from the Dublin and Wicklow coasts. A sharp thunderstorm prevailed over the S. of England. Tuesday and Wednesday were beautifully fine in Dublin, but on Wednesday night a violent thunderstorm broke out in the S.W. of Ireland, thence spreading out northwards and eastwards over both Ireland and England. These disturbances were caused by a large shallow depression (with its secondaries) which spread slowly northwards from the Peninsula to the S.W. of Ireland between Wednesday and Friday. In Dublin there was no thunder, but the air was murky and damp on Thursday and Friday and rain fell at times. Saturday proved finer and very warm after a rainy morning. In Dublin the barometer read on the average 30·083 inches, the range being from 29·955 inches at 9 a.m. of Sunday (wind S.S.W.) to 30·177 inches at 9 a.m. of Wednesday (wind E.N.E.). The corrected mean temperature was 62·2°. The mean dry-bulb reading at 9 a.m. and 9 p.m. was 61·6°. The screened thermometers rose to 73·3° on Sunday and fell to 51·7° on Wednesday. The prevalent wind was first W.N.W., then E. Rain fell on four days to the amount of ·234 inch, ·134 inch being measured on Friday. Lightning was seen on Monday evening. Fog occurred on Friday and Saturday.

Unsettled in Ireland, the week ended Saturday, the 27th, was hot and fine in the S.E. of England, the thermometer rising to 89° in the shade in London on Monday. The great heat, however, in the metropolitan district gave way on Tuesday. At the beginning of the week a severe thunderstorm passed across the S.E. of Ireland and the S. of Wales. After dusk on Sunday a magnificent display of chain lightning was seen over the sea from the Dublin and Wicklow coasts. On Tuesday morning a V.-shaped depression lay over Wales, the Bristol Channel, Devon, and Cornwall. In its rear northerly winds prevailed in Ireland, bringing fine and cool weather. On Wednesday the thermometer rose only to 63·0° in Dublin. During this day and Thursday an area of high barometric pressure passed slowly eastwards, causing very fine and pleasant weather. On Thursday afternoon the approach of a depression caused a break in the weather, and at night a small subsidiary passed eastwards across Ireland, reaching Wales on Friday morning. This disturbance brought a downpour of rain to central and eastern Ireland—the measurement at Parsonstown was 1·06 inches, in Dublin ·99 inch, on Friday morning. The main depression kept the weather dull, unsettled and showery to the close of the week. In Dublin the mean atmospheric pressure was 29·987 inches, the barometer rising to 30·271 inches at 9 p.m. of Wednesday (wind, W.) and falling to 29·627 inches at noon of Saturday (wind, W.S.W.). The corrected mean temperature was 60·5°. The mean dry-bulb reading at 9 a.m. and 9 p.m. was 60·1°. The screened thermometers rose to 72·8° on Monday and fell to 49·9° on Thursday. Rain fell on four days to the amount of 1·238 inches, ·991 inch being registered on Thursday. Thunder and lightning occurred on Sunday. S. and N.W. winds prevailed.

Stormy, changeable weather prevailed from Sunday, the 28th, to Tuesday, the 30th. On the latter day a deep depression travelled rapidly eastwards from the North of Ireland across the South of Scotland. It caused heavy rains in North Britain and a fresh gale in Ireland. This disturbance was followed by anticyclonic conditions and fine, cool weather on Wednesday, the 31st.

The rainfall in Dublin during the eight months ending August 31st amounted to 16·516 inches on 124 days, compared with 19·388 inches on 149 days in 1897, 14·464 inches on 120 days in 1896, 9·455 inches on 96 days during the same period in 1887, and a twenty-five years' average of 17·558 inches on 128·1 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in August was 3·185 inches on 18 days, compared with 6·195 inches on 27 days in 1897, 1·245 inches on 14 days in 1896, and 4·735 inches distributed over 24 days in 1895. Of this quantity ·620 inch fell on the 25th. The total fall since January 1 amounts to 17·830 inches on 112 days, compared with 25·945 inches on 143 days in 1897, 14·327 inches on 91 days in 1896, 22·685 inches on 107 days in 1895, 25·206 inches on 131 days in 1894, and 16·341 inches on 106 days in 1893.

At the National Hospital, Newcastle, Co. Wicklow, the rainfall in August was 3·803 inches on 16 days, compared with 4·526 inches on 20 days in 1897, ·716 inch being measured on the 25th and ·670 inch on the 12th. Since January, 1898, the rainfall at this Second Order Station has been 20·101 inches on 110 days. The maximal temperature in the shade in August was 75·0° on the 2nd, the minimum temperature was 48·1° on the 29th.

PERISCOPE.

INDIAN MEDICAL SERVICE.

THE Military Secretary, India Office, has forwarded the annexed list of the candidates for Her Majesty's Indian Medical Service, who were successful at the Competitive Examination held in London on August 5th, 1898, and following days:—

		M. 7,932 Marks obtained			M. 7,932 Marks obtained
1	Leicester, J. C. H.	3,179	11	Parker, L. E. L.	2,336
2	Innes, H.	2,888	12	Ross, T. S.	2,316
3	Willmore, W. S.	2,660	13	Walker, J. N.	2,278
4	Hutchinson, L. T. R.	2,604	14	Kemp, D. C.	2,274
5	Walter, A. C.	2,553	15	Roberts, V. H.	2,259
6	Hudson, C.	2,523	16	Robinson, J. E.	2,215
7	Fleming, A. M.	2,469	17	Groube, G. P. T.	2,131
8	Cruddas, H. M.	2,460	18	King, G.	2,095
9	Weinman, C. F.	2,452	19	Atal, P. P.	2,091
10	Ward, E. L.	2,411	20	Pearson, W. M'M.	2,027

BRITISH MEDICAL SERVICE.

THE Director-General of the Army Medical Department has sent us the following official list of successful candidates for Commissions in the Royal Army Medical Corps, at the Examination held in London in August, 1898:—

		Marks			Marks
1	Warren, F.	2,638	9	Jones, G. W. G.	2,183
2	Hodgson, J. E.	2,617	10	Houghton, J. W. H.	2,117
3	Barrow, H. P. W.	2,602	11	Taylor, H. S.	2,101
4	Fell, M. H. G.	2,511	12	Scott, A. L.	1,991
5	Lauder, T. C.	2,415	13	Leake, J. W.	1,969
6	Gill, J. G.	2,292	14	Lloyd, R. H.	1,935
7	Winkfield, W. B.	2,266	15	Curme, D. E.	1,892
8	Goddard, G. H.	2,211	16	Goldsmith, G. M.	1,848

SPONTANEOUS RUPTURE OF THE SYMPHYSIS PUBIS DURING LABOUR.

OELSCHLAGER *(Centralb. für Gynakol.)* has reported a case of a primipara, twenty years old, in which with the onset of labour pains two eclamptic attacks occurred in quick succession. The lower extremities were œdematous, and the urine contained a small amount of albumin. The promontory of the sacrum could be touched with two fingers introduced into the vagina. The head was quite high in the pelvis and but slowly followed in the grasp of the forceps, a not excessive degree of traction being exercised. As the head began to rotate in the small pelvis a crack was distinctly heard. Examination disclosed a separation of 1·15 inches in the situation of the symphysis pubis, and the delivery of a living child weighing nine pounds was soon readily effected. On the day following the labour a leather support was applied to the hips. For two weeks the region of the symphysis was tender upon touch and painful upon movement, but a week later the woman was able to be up and about, although a slight degree of separation of the pubic bones persisted.—*St. Louis Med. and Surg. Journal.*

PHYSICAL DEGENERATION OF THE NEGRO.

THE cause is assigned by Dr. Johnson, a coloured physician, of Brunswick, Ga., to dissipation and the want of care and forethought. Before the war consumption was practically unknown. The negro was cared for by the plantation physician. He was properly housed and fed, and forced to go to bed at an early hour and live a temperate life. The war gave him liberty, and with it a license to indulge in all those vices which enervate and degrade, while as yet he has not learned the laws of health and self-restraint.—*Post Graduate.*

RUPTURED MIDDLE MENINGEAL ARTERY.

THE author (Freeman) reports a case in the *Colorado Med. Jour.* for September, a case of rupture of the middle meningeal artery without fracture of the skull. He quotes Jacobson as having seen four similar cases, and draws the conclusion that the phenomenon results from change of shape of the skull, separating the dura mater, and tearing the artery where it is adherent within the bony canal.—*Post Graduate.*

[This lesion is very unusual. Laceration of the artery without fracture formed the subject of an excellent article by Mr. W. H. A. Jacobson in the 1885 volume of *Guy's Hospital Reports.* He concludes:—(1.) That the violence which causes middle meningeal hæmorrhage is often slight. (2.) That in these cases no fracture may be present. (3.) That where there is a fracture it is often a mere fissure, and may involve the inner table only. (4.) That after trepanning, exposure, and partial removal of the clot, very severe hæmorrhage may set in. Mr. C. J. Symonds (*Clinical*

Trans., Vol. XIX.) reports a fatal case of lacerated meningeal artery, in which the difficulty in controlling the bleeding was very marked, which the *post mortem* showed to be due to the fact that the main trunk of the artery was injured at a point beyond the seat of operation.—EDITOR].

"APENTA WATER."

BY order of the Surgeon-General of the United States Army, large supplies of this natural aperient mineral water were forwarded by the Medical Supply Depôt to the Army in the South during the late Cuban war. The New York Agents of the Apollinaris Company have received gratifying reports from the authorities of the Touro Infirmary at New Orleans of the beneficial effects of Apenta Water in the cases of yellow fever which have been recently under treatment in that institution.

DELUSIONS AND INSANITY.

AN important decision was given in the Supreme Court of Tennessee, in a case of murder, in which a plea of insanity was set up (*Jour. Am. Med. Ass'n.*) The Court held "that in criminal cases the correct issue is not that of sanity, but of responsibility. The delusions of a sane man do not make him irresponsible. The question is in such cases, is the delusion set up as a defence, the delusion of an insane person? Many men of strong minds," continues the Court, "have delusions. Remarkable instances are given in the works on medical jurisprudence of delusions in men of prominence in all the walks of life. Lord Kenyon had an unreasoning fear of poverty, and so had Lord Stowell, although he was a man of immense fortune, his home being absolutely destitute of the necessities and comforts of life. Lord Erskine would never sit at a table or remain in a company as one of thirteen persons. Lord Eldon, after he had made up his mind and expressed his opinion lucidly and conclusively, was at all times a prey to grave doubts of his correctness. Lord Brougham, upon more than one occasion, was placed in seclusion, his mind being clearly off balance. Judge Breckenridge, of Pennsylvania, is reported to have on a hot day, while holding court at Sunbury, gradually taken off his clothes until he sat naked on the bench. Judge Baldwin, of the United States Supreme Court, was a hypochondriac. A distinguished New England judge imagined that a dropsical affection under which he laboured was a sort of pregnancy. And yet none of these men were insane, because they had reason and sanity enough to conquer and overcome these delusions. A familiar illustration is that of the Mormon elders, who claimed that they had a direct revelation from heaven permitting them to practise and teach polygamy. The world generally regards this as a rank heresy, and the claim to be the evidence of an unreasonable delusion. It has, however, been held that they cannot defend on the ground of such delusion, inasmuch as otherwise they are sane, shrewd, active, successful, and unusually practical men in their business and social relations, and they have been held responsible for such delusions."—*St. Louis Medical and Surgical Journal.*

IS NEW SPLENIC TISSUE FORMED AFTER THE REMOVAL OF THE SPLEEN ?

TEDESCHI (*Gazetta degli Ospedale*, No. 97) describes an autopsy made upon a fifteen-year-old girl who had died of meningitis. No spleen was found in the normal situation of that organ; instead, attached to one corner of the large omentum was found a nodular tumour, deeply furrowed, grayish in colour, the size of a small apple; further, two small masses, of the size of hazelnuts, of pale red colour, were found in the neighbourhood of the gastro-colic ligament. Along the blood-vessels were found about twenty small bodies of various size, resembling the above in form and appearance. All these masses, macroscopically and microscopically, showed splenic tissue. Tedeschi has found but one other such case in literature. Griffin and Tizzoni found similar splenic tumours in dogs from which the spleen had been extirpated. Tizzoni describes one case in which from sixty to eighty of these nodules were found after the above operation. That these were not supernumerary spleens, but really spleens newly grown after the operation, the experimenter concludes from the fact that supernumerary spleens are generally only two or three in number; the latter organs, too, are found in the gastro-splenic ligament at the side of the true, normally located spleen, while those that grow after operation are found either in the great omentum or in duplications of the peritoneal folds. In Morgagni's case, where the post-mortem took place years after the excision of the spleen, no evidence of a fresh growth of splenic substance was found.—*Medical Record*, No. 1,433.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIV.—*A further Note on the Treatment of Tetanus with Antitoxin Serum.* By R. GLASGOW PATTESON, M.B., Univ. Dubl.; F.R.C.S.I.; Surgeon to the Meath Hospital and County Dublin Infirmary; Examiner in Surgery, Royal College of Surgeons in Ireland; Member of Surgical Council, Royal Academy of Medicine.

THE ultimate utility of serum-therapy can be gauged only by the careful tabulation of records of success and failure in the treatment of acute infective processes; and it is with the object of helping those who are working in this direction that the following unsuccessful case is published, as an appendix to two successful cases which were recorded in the February number of this journal for the current year. For the notes of the case I am indebted to my clinical clerk, Mr. F. G. FitzGerald.

CASE.—J. H., aged sixteen, was admitted to the Meath Hospital, at 2 a.m., on Friday, 10th June last, suffering from symptoms of acute tetanus; risus sardonicus, trismus, rigidity of abdominal muscles, and arching of the back being well-marked, while clonic spasms were recurring at frequent intervals. The history elicited was, that on Wednesday evening, the 8th inst., he had received a punctured wound of the sole of the foot by treading on a nail, and had complained of pain in the neck and "rigors" the following evening, which increased so much in severity that he was brought to the hospital at an early hour on Friday morning. The wound was touched with carbolic acid, and poulticed with boric acid; and, the gravity of his condition being recognised, he was at once given an injection of 10cc. of antitetanic serum; and full doses of potassium bromide and chloral hydrate were continued during the night. I saw him at 10 a.m. the same morning, and had him at once removed to a separate ward. All the symptoms had increased in intensity during the night, and, feeling that nothing except energetic treatment offered any hope of saving his life, I ordered 10cc. injections of serum to be given every four hours. On examining the seat of injury I found a punctured wound in the ball of the left foot, in which, underneath the thickened epidermis, a circular zone of dirt—presumably earth—could be distinctly seen. Accordingly, although late, I determined to freely excise the infected area, which was done by a large oval incision right down to the bone. The exposed tissues were then thoroughly cauterised with glacial carbolic acid; the wound plugged with boric wool, and a dressing applied.

At this stage the spasms were increasing in frequency and severity, though he was still able to swallow liquid nourishment, but during the afternoon it was noticed that the respiratory muscles were becoming affected, each spasm ending in a severe attack of dyspnœa and cyanosis, from which, after an interval of some seconds, he recovered.

At 6 a.m. on the 12th, the following morning—the fourth day from the onset of the symptoms, and the fifth from the infliction of the wound—Dr. Woodside, the house surgeon, was called to see him owing to the severity of the respiratory spasms, and, recognising the imminent danger of asphyxia, administered a few whiffs of chloroform, which had the effect of relieving the inspiratory spasm. This had to be frequently repeated during the short period he survived. At 10 a.m. I saw him; he was manifestly sinking, and his pulse was feeble and extremely rapid. The serum injections were continued in the hope that they might, perhaps, help to tide over the acuter manifestations of the disease. He died at 4 p.m. the same day, apparently from cardiac failure.

The portion of skin and tissue excised was sent at once to Prof. O'Sullivan of Trinity College, who found in it, along with other micro-organisms, almost pure cultures of the bacillus of tetanus.

The points of interest in the case are:—

1. The terrible suddenness of the onset of symptoms, within thirty hours of the receipt of the injury, showing a rapidity of development which the serum was powerless to overtake or neutralise.

2. The absolute inefficacy of the serum, though given in full doses frequently, to in any way modify the development of the graver symptoms, or avert, even temporarily, the fatal issue.

3. The absolute proof of the nature of the disease afforded by the culture experiments.

It may be mentioned that the second observation bears out the statement made by the authorities of the Pasteur Institute in Paris, that it is only in cases in which the onset of the symptoms has been somewhat delayed that satisfactory results have been obtained from the use of the serum in treatment.

ART. XV.—*The Relations between Preventive Medicine and Vital Statistics.*[a] By THOMAS W. GRIMSHAW, C.B., M.A., M.D., Univ. Dubl.; Ex-President, R.C.P.I.; Registrar-General for Ireland.

THIS Section, as you are aware, has been appointed by the Council of the Royal Institute of Public Health to deal with the subjects included under the comprehensive title of "Preventive Medicine and Vital Statistics." The Section is therefore pre-eminently the Section of State Medicine of the Congress.

It is with no small degree of pride and satisfaction that I find myself chosen as the President of this Section, and I have to thank the Council of the Institute for having honoured me by placing me at the head of so important a branch of this Congress.

Dublin, I think, may specially claim to be the home of State Medicine, for it was here within the walls of Trinity College that Dr. Rumsey, who has been justly styled the

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[a] Being an Address delivered before the Section of Preventive Medicine and Vital Statistics, at the Congress of the Royal Institute of Public Health, held in Dublin, August 18th to 23rd, 1898.

Father of State Medicine, took the first step to have State Medicine recognised as a special branch of Medical Science—to have it recognised as a profession to serve the State in the prevention of disease, and thus to confer countless blessings on all, especially upon the poorer classes of the community. This may appear to be a reference to somewhat ancient history, but as a century is a small period in the history of a nation, so thirty years is but a small period in the history of Preventive Medicine. I shall therefore briefly refer to the important epoch in the history of State Medicine which arose in Dublin in the year 1867.

At the meeting of the British Medical Association held in Dublin in that year, it was moved by Dr. Rumsey, seconded by Dr Alexander Patrick Stewart, and unanimously resolved:—

"That this Association do express its decided approval of the plan proposed by Dr. Farr—namely, the appointment of a registration medical officer in every registration district, or group of districts, with medico-legal and sanitary functions, and pledges itself to support that measure, as the initiative step to a national organisation for purposes of State Medicine."

It was then moved by Dr. A. P. Stewart, seconded by Dr. Sibson, and unanimously resolved:—

"That the Committee of Council be instructed to direct their early and special attention to the amendment of the sanitary laws; to invite the co-operation, for this end, of the Council of the National Association for the Promotion of Social Science; and to urge the branches of this Association to promote the same object by local efforts, by representation to individual Members of Parliament, and, if need be, by deputations to Her Majesty's Government."

These resolutions marked an important epoch in public medicine, and may be considered as the foundation upon which all sanitary legislation has since rested. Thus, at the first Irish meeting of the Association, one of the most important steps was taken to unite the Association with the general public in promoting measures connected with public medicine.

The result of these proceedings was the appointment by the General Medical Council in the following year of a Committee to deal with the subject, and the publication in the year 1869 of the important Report of that Committee of the General Medical Council.

At a meeting of the Council held on the 9th and 12th July, 1869, the following resolution was passed:—

"That in any amended Medical Bill which may be prepared for Parliament by the Council *it is desirable* that the requisite Permissive Clauses for registering a qualification in State Medicine be inserted in addition to any of the qualifications sanctioned by the Medical Acts."

The subject gradually passed into abeyance, and it was not until the last Medical Act, 49 & 50 Vic., cap. 48 (1886), became law that State Medicine diplomas became legally recognised qualifications. Thus nearly 20 years passed by before the Medical Council was able to carry out the views that they held as to the matter and place the profession of State Medicine in a legal position, and it was not until the passing of the English Local Government Act of 1888 (51 & 52 Vic., c. 41) that the State thought it worth while to require that medical officers of health should have any proof in the way of a diploma in State Medicine that they were in any way specially qualified to discharge the important duties committed to their care.

Notwithstanding the delays of the General Medical Council and Parliament, the Universities and Medical Corporations were taking steps to supply suitable qualifications to those who wished to have their knowledge of State Medicine tested and certified. Here, again, I am happy to be able to claim that Dublin was in advance. The University of Dublin was the first to move in this important matter, and held its first examination for diplomas in State Medicine in the year 1871, when four candidates obtained the qualification. Again, in the year 1882, the Royal College of Physicians of Ireland was the first of all the Medical Corporations to establish a diploma in State Medicine.

Since then other universities and colleges in the United Kingdom have followed the example of the Dublin authorities. There is thus now an ample supply of qualified diplomates in State Medicine ready and willing to undertake the duties of medical officers of health, and it will be a disgrace alike to the Government and the local authorities of the United Kingdom if in future they appoint any member of the medical profession to any office involving duties connected with the public health or State Medicine who is not possessed of a diploma in State Medicine.

It is not so long ago since the public looked upon Preventive Medicine (or, as the more popular language of the present day has it, "Sanitation") as a matter purely appertaining to the medical profession, and when Her Most Gracious Majesty the Queen came to the throne it was generally considered that none but members of the medical profession had anything to do with the prevention of disease. Now every profession is asked to co-operate—the engineer, the architect, and the lawyer are all called upon for their assistance to prevent the spread of disease, and each profession is assigned its province of work, and enlisted with the others to wage war against preventable disease with its attendant miseries and fatalities.

The enlisting of other professions in the practical work of the prevention of disease does not in the least diminish the responsibilities of the medical profession in regard to the matter. On the contrary, it has rather increased those responsibilities, for the other professions look to medicine to guide them as to their aims. It is the medical profession that must study the causes of disease, and suggest the remedies to be applied by the other professions. If the medical profession gives an uncertain sound in this great fight with disease, the architects, engineers, and lawyers will certainly be led astray and probably do more harm than good in trying to promote sanitary measures. It is a great privilege as well as a great responsibility of the medical profession to guide the work of the prevention of disease. It is also their boast that while their primary object has been the cure of disease, by which they earn their living, yet they have always been foremost in its prevention. Yet even the profession of medicine was backward in its efforts at the beginning of the Victorian era. At a meeting of the British Medical Association, held in Liverpool in 1839, Dr. Jeffreys, in his Presidential Address, remarked:—

"'Hygeia' was a subject in this country, comparatively speaking, neglected . . . . and this may be said without detracting from the great merits of those authors who have afforded aid to the student by their writings on this subject—namely, Dr. Southwood Smith, on the 'Philosophy of Health'; Andrew Combe, on the 'Principles of Philosophy'; R. Dunglisson, on 'Human Health'; Alexander Kilgour, on 'Hygiene'; Hodgkin's Lectures, and Garnet Dillon's Letters on 'The Mortality of the Metropolis'; and last, though not least in importance, our talented Associate now present, Dr. Maunsell's recent pamphlet on 'Political Medicine.'"

The Dr. Maunsell here referred to was the late Henry Maunsell, Fellow of the Royal College of Surgeons of Ireland, who afterwards became a journalist, and was the well-known editor and proprietor of the *Dublin Evening Mail.*

Vital Statistics are included in the title of this Section, as the scheme of vital statistics is one of the main foundations upon which State Medicine rests. Without the aid of vital statistics the medical officer of health would be without an accurate guide as to what he has to attempt, and without a test as to what he had accomplished. The science of vital statistics is comparatively new, and can only be regarded as having any real existence as a science since the Act for the registration of births and deaths came into force in England in the year 1836. No doubt life tables and bills of mortality existed long before that date, but the old bills of mortality were so local, and so defective, that they could not be used as a basis for any scientific work. As I have referred to Dr. Rumsey as the Father of State Medicine, I may refer to Dr. William Farr as the Father of Vital Statistics. He was appointed Superintendent of Statistics at the General Register Office in the year 1839. The objects of vital statistics cannot be better defined than in the eloquent language of Dr. Farr himself in his letter to the Registrar-General, contained in the supplement to the Thirty-fifth Annual Report of the Registrar-General of England, in which he wrote:—

"How the people live is one of the most important questions that can be considered; and how—of what causes, and at what ages—they die is scarcely of less account; for it is the complement of the primary question, teaching men to live a longer, healthier, and happier life. Armed with this golden bough we may enter the gloomy kingdom of the dead, whither have gone in twenty years nine thousand thousand English children, fathers, mothers, sisters, brothers, daughters, sons—

> "Matres atque viri, defunctaque corpora vita
> Magnanimum heroum, puri innuptæque puellæ
> Impositique rogis juvenes ante ora parentum—

each having left memories not easily forgotten, and many having biographies full of complicated incidents. Here, fortunately for this inquiry, they appear divested of all colour, form, character, passion, and the infinite individualities of life; by abstraction they are reduced to mere units undergoing changes, as purely physical as the setting stars of astronomy, or the decomposing atoms of chemistry; and as in those sciences so in this, the analysis of the elementary facts observed in their various relations to time and place will shed new light on the more complicated phenomena of national life."

Dr. Farr then refers to the work he has in hand upon the analysis of the death returns for the decade 1861-70, and continues:—

"The primary object is to determine what the death toll is at the several ages, and what the causes of the loss of life are under different circumstances. The importance of this determination will become apparent by enumerating some of the relations the mortality bears to other orders of facts. There is a relation betwixt death and sickness; and to every death from every cause there is an average number of attacks of sickness, and a specific number of persons incapacitated for work. Death is the extinction of pain. There is a relation betwixt death, health, and energy of body and mind. There is a relation betwixt death, birth, and marriage. There is a relation betwixt death and national primacy; numbers turn the tide in the struggle of populations, and the most mortal die out. There is a relation betwixt the forms of death and moral excellence or infamy; men destroy themselves directly or their fellows under the most varied mental conditions; they may die by indulgence in excesses, by idleness, or by improvidence. Death is met especially in primeval races not only in conflicts with each other, but in conflicts with other races of animals—directly with carnivorous quadrupeds or creeping poisonous serpents, and indirectly with four-footed animals, winged birds and multitudinous insects, blighting and consuming food. Death is also wrought by low but organised parasites in the body. It is still more frequently the result of elementary molecules (zymads), which, though of no recognised form, evidently thrive, propagate, die in the bodies of men, disintegrating or devitalising their tissues."

Had the eloquent Father of Vital Statistics lived in the present day, he would, if possible, be still more eloquent over the discoveries of modern bacteriological science, which is gradually displacing the "zymads of no recognised form" by well-recognised organisms which soon, I have no doubt, will be as well known as the more highly organised enemies of human beings enumerated by Dr. Farr.

Dr. Farr goes on further to say:—"There is finally a relation betwixt death and the mean lifetime of man."

Time does not permit me further to quote from this eloquent statistician, but let those who look upon statisticians as Dry-as-Dusts read any of Dr. Farr's introductions to his numerous reports and they will learn that the writer of blue books, even blue books teeming with figures which can be exceeded in numbers only by the "zymads" of Dr. Farr, may show an eloquence equivalent to that of a Macaulay, and tell a story equal in interest to a sensational novel.

The Father of Vital Statistics has had many worthy sons and successors, none more so than Dr. William Ogle and Dr. John Tatham, who have succeeded him in his chair at Somerset House, but I doubt if any will ever rise to equal him in the combined literary talent, pathos, and eloquence which adorned his reports.

What then is the relation of Vital Statistics to Preventive Medicine, and their use to the community? They serve three main functions:—

1. To provide standards by which the health of com-

munities may be measured, and to form the basis for calculations for the purpose of insurance, annuities, benefit societies, &c.

2. To indicate by high death-rates, or by death-rates disproportionate to other conditions of the community, that defective sanitary conditions exist which require to be removed.

3. To show whether the remedies applied with the view of improving the hygienic conditions of communities have been attended with success or are fulfilling their objects.

In Mr. Noel Humphreys' edition of Dr. Farr's "Vital Statistics," p. 111, he remarks:—"It may be confidently assumed that the most important branch of vital statistics is that which deals with deaths and rates of mortality."

Agreeing, as I do, with Mr. Noel Humphreys, my remarks upon the three main indications of vital statistics which I have mentioned will chiefly, almost wholly, refer to deaths and death-rates.

I do not propose to discuss in detail the various functions of vital statistics under the three heads I have referred to, but wish to place before you some points of importance which I consider specially suitable for consideration on an occasion such as this.

As an example of some of the most important indications of vital statistics, and one which shows strikingly the important results accomplished by sanitary measures, let us take the crude death-rates of the United Kingdom for as wide a range as published records permit. We find that for England and Wales during the decades, 1841-50, 1851-60, 1861-70, the death-rates were respectively 22·3, 22·2, and 22·4, showing that during 30 years there was but little variation from what might be then termed a standard death-rate of about 22 per 1,000 for England. In the next following decade, 1871-80, when sanitary measures became somewhat of a reality, the rate fell to 21·3, or about 1 per 1,000, which in round numbers means a saving of 240,000 lives during the ten years, as compared with the previous equivalent period. Again, in the next decade, 1881-90, a further fall of the death-rate to 19·1 took place, representing a saving of some 600,000 lives more.

In Scotland the records do not extend back so far as in England, but here again we find that for the decade, 1861-70, the death-rate was 22·1, about the same as England and Wales at and prior to that period; in the next decade, 1871-80, the rate fell to 21·6, representing a saving of about 18,000 lives; in the decade, 1881-90, a further fall in the death-rate took place and it stood at 19·2, representing a saving of about 93,000 lives. In Ireland we have only records for two decades. In the first of these, 1871-80, the death-rate was 18·3 per 1,000 living; in the second, 1881-90, it fell to 17·9, showing a saving of life amounting to about 20,000. Thus, taking the three Kingdoms, we have a decrease of mortality of some three-quarters of a million of people during the ten years 1881-90.

The case of England and Wales is peculiarly instructive. During the three earlier of the five decades for which figures are available, although there were many sanitary statutes, there was not, until the passing of the Public Health Act of 1870, any universal sanitary organisation throughout England and Wales—in fact, the sanitary net was not spread in England until after 1872. Prior to the spread of this net, the death-rate of England and Wales remained at about 22 per 1,000. After the sanitary system of 1872 came into force each decade showed a decreasing death-rate. Similar results have followed in Scotland and in Ireland.

Here we have illustrated by the statement I have just made, though the statement is very rough, what used to be considered a standard death-rate for England prior to 1871, what sanitary measures accomplished when the sanitarian's net was set, and we also see what the sanitarian may expect to accomplish—in fact, all the three indications which vital statistics are expected to give to the sanitary reformer.

In the early days of vital statistics these were the only measures available for the sanitarian and vital statistician, but it was soon found that more exact methods were absolutely necessary, and that something like exact standards for measuring the health of the people must be established.

How then are these standards to be obtained, so as to fulfil the first proposition I have laid down regarding the indications of vital statistics?

To Dr. William Farr is due the great honour of having investigated the difficult question as to what these standards should be. To his scientific researches into what before his day were almost unexplored statistical regions, to his wonderful knowledge and astute mind, and to his untiring labours, we owe the discovery of these standards, by which all we vital statisticians are accustomed to test the health of the people and measure the work of sanitary administration.

I have already shown what crude death-rates may indicate when deduced from large masses of figures, founded on ascertained facts, extended over long periods and relating to many millions of human beings. In addition to the dazzling masses of figures collected by the Registrars-General of the United Kingdom, we have the more modest figures issued week by week by the General Register Offices, and now, I am glad to say, issued weekly by the sanitary authorities of some of our great towns.

But these weekly returns when rolled together, quarter by quarter, and year by year, convey full information as to the condition of the living and dying in our great towns. Few read the original weekly returns, but many, all of you, perhaps, read their abstracts as published in the daily press, but few, I fear, consider the great and widespread import they possess. They are looked upon as of small importance as compared with the variations of prices in the Stock Exchange lists, or the Corn Exchange returns. Few look at the ages of those who have fallen or stop to consider that the items in the weekly returns mean joy to many in the births, and incalculable misery to thousands in the deaths. Few stop to look at the ages of those whose deaths are recorded, the countless miseries of those who remain, when the hand of death has stricken down the bread-winner of the family, the loving wife, protecting husband, or beloved child. When, and how, and where do all these miseries arise? And what indications have we as to how these evils may be mitigated? Vital Statistics answer the first question, and Preventive Medicine must answer the second.

Dr. Farr early set about trying to set up standards to test the health of communities by vital statistics, mainly by death-rates. He found, as was patent to everyone who had ever taken the most superficial view of the matter, that a very much larger number of persons in proportion to the population died in towns than in country districts, and one of his first endeavours was to set up what has been termed a "healthy district death-rate." In his supplement to the Sixteenth (1841-50) Annual Report, Dr. Farr, after carefully considering the death-rates of all the districts in England, and finding a few as low as 15 per 1,000, a few more at 16 per 1,000, and a very considerable number standing at 17, remarked, in connection with these districts, "that the health and the circumstances of the population by no means approached any ideal standard of perfection. Nature (he says) does much for the inhabitants," and he refers to the fresh air and its beneficial influences, and states that the mortality of the English people is very variable, but under generally favourable conditions the death-rate does not exceed 17 per 1,000, and that the death of 17 persons per 1,000 may "therefore be considered, in our present imperfect state, natural deaths . . . 17 is the point above which all the mortality is excessive." Seventeen was "the zero" of Dr. Farr's scale some half century ago, and in England the scale ranged to 19 or 20 degrees. Note that Dr. Farr did not say that all people in England should die at the rate of 17 per 1,000 and that would be satisfactory. He looked upon it as by no means an ideal standard. Nevertheless it was a valuable standard, and showed that any death-rate above 17 some 50 years ago should be within control and ought to be controlled. The deaths which he refers to as 19 and 20 degrees were manifestly a clear waste of life. Since Dr. Farr's first healthy district standard death-rate was established a considerable change has taken place. Dr. Ogle, who was Dr. Farr's successor, was able to give the healthy standard at a lower "zero," and Dr. Tatham's recently issued Report reduces it still lower, just as I have shown that the crude death-rate has diminished. You have seen that for the healthy districts the rate for 1841-50 was 17 per 1,000, for the last complete decade a rate of 15 is considered high enough for a healthy rate, and indeed from the figures before Dr. Tatham it might have been fixed at fourteen without any risk of exaggeration. His caution, however, would not allow him to go below 15.

The figures recorded for Ireland are not sufficiently extensive to enable me to give you what I consider a healthy district death-rate for this country, but I can give you a rough measure which shows the soundness of Dr. Farr's basis.

If a line be drawn from slightly to the west of the city of Londonderry in the north, to the town of Skibbereen, in the south-west of Cork, we have Ireland divided into two social provinces, east and west of this line. The western division includes the 8 western counties of Ireland, the population of which was 1,214,000 at the census of 1891, but few considerable towns, and having an aggregate civic population (towns of 2,000 inhabitants and upwards) of 85,723 or 7·1 per cent. of the total population. The death-rate of this area was for the decade 1881-90 at the rate of 14 per 1,000. The eastern districts contained a population of 3,491,000 at the last census with a civic population of 1,138,390, including all the large towns of Ireland; the death-rate for this area was 19·1 for the decade.

Here we have a very low death-rate, only 14 per 1,000 in what is notoriously the poorest district of its size in the United Kingdom. How the fresh air and the rural dwelling places make up the difference! This may be considered a healthy district death-rate for Ireland.

The map which was designed by me for the Government when Mr. Arthur Balfour was bringing his benevolent scheme for ameliorating the poverty and distress of the western districts of Ireland before Parliament displays at a glance the distribution of comparative wealth and comparative poverty in Ireland.

Those who have visited the wild and beautiful districts of western Ireland, as I have, will, no doubt, feel much surprised that the death-rate of the western counties may be considered as a healthy district death-rate; but on the other hand those who have visited and investigated the slums of Dublin, as I have, and as possibly some of you have during the meeting of this Congress, will have little difficulty in appreciating how much happier is the lot of the western peasant, though his house be poor and small, and often over-crowded, than that of the dweller in the Dublin tenement house, with its crowded rooms and fœtid atmosphere. The western peasant with all his poverty is rich in fresh air and out-door exercise, the Dublin labourer is in most cases devoid of both. The difference in the death-rate is easily explained by those who have had experience of both communities. The number and poverty of the labourers of Dublin is no doubt extreme, although standards for comparison are wanting. The poverty of the labourers and very small farmers of western districts of Ireland is also extreme, but in every other respect they possess advantages over their city brethren. I cannot pursue this interesting subject further, but let me say a word about the high death-rate of our towns as compared with our country districts.

In England we find that, according to the last decennial summary, 1881-90, issued by the Registrar-General, the death-rate of the 28 great towns of England and Wales averaged 21·51 per 1,000 living. In the 50 smaller towns it was 19·73, and in all these taken together it was 21·08, while in rural England the average did not exceed 17·63 per 1,000, compared with a general rate for England and Wales of 19·08. Not only was the town death-rate at all ages in excess, but the infantile death-rate was as high as 160 per 1,000 births in the 78 towns of urban England, while it was only 128 in the rural districts, compared with 142 for the whole country.

In Scotland, according to the decennial summary for the same period, the death-rates were for the principal town districts 22·01, for the large town districts 19·23, for the small town districts 18·44, for the mainland rural districts 15·90, and for the insular rural districts 15·67 per 1,000. Grouping all the urban districts of Scotland together the death-rate was 20·5, against 15·9 per 1,000 in the rural districts. The infantile death-rate was 130 per 1,000 born in urban and 87 in rural districts, with a rate of 119 for the whole of Scotland.

For Ireland the rates were—In all urban sanitary districts, comprising about one-fourth of the population of the country, 24·1 per 1,000, but some of these towns have very small populations, having under 2,000 inhabitants. There are only six towns in Ireland at all comparable in population with the large English towns—viz., Dublin (and district), Belfast, Cork, Waterford, Limerick, and Londonderry. The death-rate in these was 25·7 per 1,000.

In Dublin the rate was 27·1; in Belfast 24·4; in Cork 24·9; in Waterford 26·8; in Limerick 25·7; in Londonderry 22·0. Only the first three of these should be taken as fairly comparable with the great towns of England, and in each case the mortality exceeds the average rate for the 28 great English towns (21·5), their collective mortality being at the rate of 25·9 per 1,000, which also exceeds the average of the great Scotch towns (22·01).

Taking all Irish towns with a population of 10,000 and upwards the rate was 25·5 per 1,000.

We may take another view of this subject. If we compare all the Superintendent Registrar's districts (which are conterminate with the Poor Law Unions containing towns of 10,000 inhabitants and upwards in Ireland, we find the death-rate to be 22·3, while in districts where towns of this class are absent the death-rate is but 16·0 per 1,000. It is therefore clear that the crude death-rate of Irish towns is excessive in comparison with the death-rate for the whole country, and with the death-rate of unions where there are not any towns containing 10,000 people or upwards. It also compares unfavourably with that of English and Scotch towns.

The infantile death-rate of Irish towns having a population of 10,000 and upwards was 154 per 1,000 births, as compared with 78 in the rural districts, and 95 for the whole of Ireland. In towns of 20,000 inhabitants and upwards it was 157.

(To be continued.)

ART. XVI.—*A Medico-Statistical Sketch of the North-West Frontier Disturbances, India, June 19th,* 1897, *to April 6th,* 1898. By Surgeon-General ALBERT A. GORE, F.R.C.S.I.; Principal Medical Officer, Her Majesty's Forces in India.

SINCE the return of the Chitral Expedition there had been peace on the North-West frontier, and it appeared probable that for some time there would be no further disturbances amongst the turbulent tribesmen inhabiting these mountainous regions. The attack on Mr. Gee's escort at Maizar, in the Tochi Valley, in June, 1897, quickly dispelled this idea, and from there to the Malakand, from Malakand to Shabkadar, from the latter to the Khyber, and from the Khyber to Kohat, the Kurrum Valley, and the Samana Range of outposts, the tribes were, in succession, up in arms, and the state of unrest extended for more than five hundred miles of frontier. Troops were pushed to the front with unparalleled despatch, and there was quickly in line the finest force ever sent to meet an enemy, and large enough for any emergency. Those only who were in a position to understand what the organisation, equipment, transport, and supply of such an army meant in countries where, in the main, only pack transport could be used, could appreciate the work which had to be, and was, done so efficiently.

To meet the many enemies on the North-West frontier the following were the mobilised forces and the corresponding medical arrangements required:—

FIELD FORCES.

Tochi Valley, Kohat-Kurrum (including the operations on the Samana), Malakand, Mohmund, Tirah Expedition, Buner.

Corps Units Mobilised.

Batteries of artillery	16	Companies of sappers and miners	10
Regiments of cavalry	9		

Battalions of infantry, 59

Average Strength.—British officers, N.-C. officers and men, 18,688; native officers and men, 41,677; followers, 32,696. Total, 93,061.

MEDICAL ARRANGEMENTS.

Field Hospitals Mobilised.—14 British; 22 Native; beds, 3,600.

Base General Hospitals.—Buner, 200 beds; Kohat, 250; Rawal Pindi, 1,250; Nowshera, 1,250.

Rest Depôt Hospitals.—Peshawar, 50; Golra Junction, 25; Khushalgarh, 100. Total, 3,125. Grand total, 6,725.

Personnel, Equipment, Transport.

Corps Units.

Medical officers	62	Field stretchers	274
Assistant-surgeons and hospital assistants	62	Bearers	900
Ward orderlies and ward servants	88	Pack mules	254
Tents G. S., 80 lbs.	88	Field panniers, pairs	88
Field dandies	150	F. M. C.s, F. S. haversacks, &c.	264

"*Field Hospitals and included Bearer Companies.*"

Medical and hospital personnel	9,658	Tents G. S., 160, 80, 45, and 40 lbs.	1,394
Animals	4,180	Maunds, exclusive of tongas	7,790
Field dandies	720	Trains to rail head	36
Ambulance tongas	720		

Medical and Surgical Results (Field and General Hospitals).—Diseases and wounds—admissions, 41,055; deaths, 1,602. Ratio per 1,000 admissions to strength, 441·16; ratio per 1,000 deaths to strength, 17·20.

Work of a Base General Hospital, Nowshera.

British.			Native.		
Admitted	Died	Per cent.	Admitted	Died	Per cent.
3,368	60	1·76	6,018	170	2·80

Percentages of Sick in the Field.—Between the 28th of June and the 27th of December, 1897, the following were the percentages of sick British and Native troops in the field:—

Tochi Valley	9·08	Kurrum movable column	3·14
Kohat-Kurrum	1·52	Peshawar column	3·14
Malakand	2·16	Line of communicative troops	5·14
Mohmund	2·50	Reserve brigade	5·30
1st and 2nd divisions, Tirah Expeditionary	3·25	Peshawar and vicinity	10·52

Average, 4·58.

Sanitation.—Very great attention was paid to the sanitary state of the various posts and camps by the medical officers, and, as a rule, their condition was remarkably good.

The weekly sanitary inspections were very carefully made, and especially with a view to the detection of incipient scurvy, which was entirely absent from the British troops, and in the few cases which occurred amongst the Native troops and followers these were of a very mild type.

Rations and Clothing.—The rations, as a rule, were of excellent quality, and the clothing was very good and suitable to the varying conditions of climate.

Water Supply.—The water supplies were safeguarded as far as practicable, and purified as far as possible.

Quinine was used as a prophylactic when considered desirable.

Six military expeditions were being carried on under Field Service conditions, namely:—

The Tochi Valley Field Force was mobilised June 19th—average strength to February 18th, 1898:—

British officers	143	9,919
,, troops	709	
Native ,,	5,165	
Followers	3,902	

The Kohat-Kurrum, including the operations on the Samana Range up to the 15th of October, when it merged into the Kurrum Movable Column:—

British officers	244	20,338
,, troops	2,333	
Native ,,	8,602	
Followers	9,159	

The Malakand Field Force, from July 26th, 1897, to January 21st, 1898:—

British officers	217	10,630
„ troops	2,494	
Native „	4,979	
Followers	2,940	

The Mohmund Field Force, from the 3rd of September to the 6th of October, 1897:—

British officers	112	6,374
„ troops	1,174	
Native „	3,541	
Followers	1,547	

The Buner Field Force, from January 1st, 1898, to the 4th of February, 1898:—

British officers	176	8,696
„ troops	2,131	
Native „	3,170	
Followers	3,219	

And, lastly, the "Tirah Expeditionary Force," October 9th, 1897, to April 8th, 1898—37,104 troops and followers.

For these several expeditions a very large transport was required.

Field Force	Camels and Bullocks	Other Pack Animals
Tochi	4,200	2,300
Kurrum Valley	2,390	280
Kohat Garrison	750	180
Malakand	3,320	2,950
Peshawar Column	980	3,200
„ Garrison	790	500
Tirah Main Column	13,370	29,440
Reserve Brigade	670	460
Reserve Animals	3,000	3,000
	29,470	42,310

The numerous attendants on these animals had to be cared for when ill by the medical officers and their subordinates, whereas in older times special hospitals had been allocated to them.

Of the tribes who were quickly to feel the power of the Government of India, the Karlanis, of whom the Afridi Afghans were but a sub-tribe, consisted of sub-divisions of the Utman-Khel (located between the Swat and the Mohmund country, and *enroute* to Chitral); the Shinwaris located in the mountains west of the Khaibar, and some in the Kunar Valley, north of the Kabul river; the Khogianis, who adjoined them on the west; the Wurukzis or Urakzis, who were located in the difficult mountain tracts of Tirah, the Khaibar, and Jallalabad; the Mangalis; Jzadrans; the Shitaks, and other minor Bangash sub-tribes of Karlarnis, located round Kohat and adjoining it, as far as the Indus and further north and west into the Kurrum Valley; and some others of lesser note and strength, besides the Khataks and Dilazaks in the Peshawar district; and, lastly, the Waziris, the Mushud and Darwesh Khel, and their ramifications. On the other side "the Karakar Pass" had as yet been unvisited by Europeans. It was through this defile that Akbar's general, Birbar, when he retreated from Swat through the Buner country towards Attock, lost his army and his own life on the way.

The Utman-Khel were supposed to muster 10,000 fighting men; the Mohmunds were also a powerful tribe; the Wurukzis 20,000; the Shinwaris some 12,000; the Shitak and other Bangash branches located further west than these as far as the Kurmak Valley and adjoining, 100,000 families. Allowing one fighting man to every two, they could furnish a formidable number. The total strength of the eight clans of the Afridis was calculated at 26,000 to 27,000 combatants, and the Orakzais about the same number. Tirah was regarded as the headquarters of their forces, hitherto a *terra incognita*. In 1878 two expeditions had entered the Bazar Valley, but neither was strong enough to essay the Raigal or Maidan. As to character, most of these tribes bore the worst possible. Paget and Mason wrote of the most powerful of them, that they were "ruthless, cold-blooded, treacherous." Against the Afridi Afghans more punitive expeditions had been undertaken since the annexation of the Punjâb than against any other, and between 1849–63 along the frontier no less than fifteen, commanded by some of the most distinguished soldiers of the Indian army. In some of these we had been pretty roughly handled, as at Umbeylah and the first Black Mountain, where we lost heavily in killed and wounded. The old jezeel had now given place to arms of precision in the hands of men trained as marksmen from their early youth, and hospital provision had to be made for troops operating from the malarious and hot valleys of the Tochi and Swat to frigid mountain regions where diseases of quite a different nature were to be anticipated—marching and campaigning from the most trying summer season to the most salubrious winter one. As might have been expected, these conditions, as they prevailed the one over the other, influenced the medical history of the different field forces.

Upon receipt of the news of the treacherous attack on the Political Officer's escort at Maizar, the Government of India resolved immediately upon a punitive expedition into the Tochi Valley, and of such a strength as would not invite attack, and would give confidence to any clans who might be hesitating whether they would join the malcontents in the upper end of the valley. In less than a week orders were issued to mobilise two brigades of infantry, with their hospitals and medical *personnel*, and they were well on their way by the end of June. Every precaution was taken to protect the European regiments on their march from Khushalgarh to Buner, *via* Kohat, 110 miles; two sections of a British field hospital, with ambulance carriage, accompanied each battalion. Standing camps of E. P. G. S. tents and a supply of ice and water were provided at each of the halting places. The intense heat at this most trying period of the year, July 3rd to 14th, proved very exhausting, and there were several cases of heatstroke, but only two succumbed. The Highlanders had to leave behind at Buner a considerable number of cases of foot sore, and others more or less prostrated by the high temperature. They all, however, quickly recovered under a short rest and treatment, and rejoined their respective regiments on the march onwards, and on the 19th of July the two battalions showed the following effective and sick—

Effective, 1,521. Sick, 38. Total, 1,559.

After two months sojourn in this very malarious valley, with its generally impure water supply and without the stimulating excitement of active war, fevers, dysentery, and diarrhœa became very prevalent, and more especially in particular regiments. The Rifle Brigade and two native battalions were withdrawn later; the Highlanders stood the climate much better, and on the 8th of November had 564 effective out of the total of 774 recorded on the 19th of July; had had comparatively few deaths, and marched into Buner on its return to India, January 20th, 1898, 650 strong. With the advent of the cold weather the health of the troops had improved, and on the breaking up of the force all were "fit and well."

Average strength, troops and followers	9,919
Number of deaths . . .	284
Percentage to strength . .	2·86

The brigades for service in the Tochi had hardly reached their destination when, on the night of the 26th July, the camp at the Malakand was fiercely and suddenly attacked and as gallantly defended, and, after a few days' desperate fighting, the enemy was in full retreat, severely punished. In the short struggle we lost 23 killed and had 150 wounded. On July 30th, three days after the receipt of the news of the attempt to force the position had reached headquarters, orders were issued to mobilise the "field force," which, with its field, line of communication, base general hospitals, medical store depôt, was by the 10th of August already encamped, in pursuit of the enemy, in the cooler climate of Amandara. The whole valley of the Swat was then beautifully green, the river in full flood and split up into many channels looked highly picturesque, and the troops were in the best spirits and anxious for the further advance. The medical and surgical records of its after-campaigning in all varieties of climates, bivouacking a good deal, were briefly—

Average strength of troops and followers	10,620
Number of deaths . . .	230
Percentage to strength . . .	2·16

The principal diseases and injuries were—

Detail	Admissions to hospital	Deaths in hospitals
Fevers	2,544	26
Dysentery	983	13
Diarrhœa	747	0
Chest affections	275	32
Venereal	186	0
Debility	161	1
Rheumatic	106	0
Heat stroke	78	5
Hepatic	28	2
Scurvy	9	0
Alcoholism	1	0
Gunshot wounds	1,188	28

The Mohmunds having attacked the old Sikh fort of Shabkudar, beyond Peshawar, and being repulsed with heavy loss, the "Mohmund Field Force" came into existence on the 3rd of September, 1897, and continued its operations in the particularly trying country for troops at that time of the year owing to the heat and glare from the sand and rocks and the severe kotals which were constantly met with; rocky, arid, sparsely cultivated, little water, and nothing to be procured on the line of march. Its operations came to an end with the complete submission of the tribes on the 6th of October.

Average strength of troops and followers	6,374
Admissions to hospitals	1,180
Deaths	6
Percentage to strength	·09

Towards the end of October, in view of the increasing unhealthiness of the Swat Valley, the forces in the field there were distributed between the stations of Mardan, Jalala, Dargai, Malakand, and Chakdara, with the base at Nowshera. The general health of the troops was good and its transport in a very satisfactory state. The following were the health statistics on November 1st:—

British Regiments.

Battalions	Sick	Total
Royal West Kent	24	687
Highland Light Infantry	73	713
The Buffs	13	581

Summary.

Detail	Strength	Sick included
Europeans	2,469	175
Native troops	6,061	85

Sick per cent., 2·98.

In December heavy rains fell at intervals, but the weather was fine and cold. The troops reported to be "in good form and health."

On 23rd a communication was sent to the Bunnervals and Chamlavals that a punitive expedition would shortly be sent against them for their complicity in the recent disturbances in Swat if they did not at once comply with the terms of the Government of India, and two brigades were concentrated with their field hospitals and medical *personnel* at Koonda, on the borders of the Swat canal. The tribes not complying, the troops were quickly launched against them, concentrated at Sanghoo on January 6th, 1898. The Tanga Pass was reconnoitred on the 7th, and the peaks above were in the hands of the troops shortly afterwards and the forces on the well-cultivated plains beyond; the men and followers in excellent spirits. During this short campaign, January 1st to February 6th, the following were its medical statistics:—

Average strength, troops and followers .	8,696
Admissions to hospital . . .	340
Deaths	6
Percentage of admissions to strength .	3·90
" " deaths " " .	0·07

So closed the series of military operations outside the sphere of the invasion of the Tirah Maidan. From the 10th of June, 1897, to the 3rd of January, 1898, the casualties in the field numbered 435 killed, 1,318 wounded, 8 missing. On the 15th of January in the field and general hospitals were—

British officers . . .	71	3,922
British soldiers . . .	1,211	
Native troops . . .	1,277	
Followers . . .	1,363	

or 10·7 per cent. of the forces engaged. With the 1st and 2nd Divisions Tirah Expeditionary Force in the field—

	Per cent.
British officers	3·10
British troops	2·50
Native troops	4·03

Medical Staff.

	Tochi	Malakand	Tirah
Administrative	1	1	7
Regimental	8	12	36
Field hospitals	22	20	89
General hospitals	3	0	54
		253	

Stations.—Kohat-Kurrum Force: Parachinar, Sadr, Thal, Doaba, Kai, Shinwari, Samana, Hangu, Ustarzai, Khushalgarh. Tirah Expeditionary Force: Jumrud, Ali Masjid, Lundi-Kotal, Bara, Mattiani, Mamani. Peshawar and vicinity: Peshawar, Cherat, Nowshera, Rawal Pindi, Cambellpore, Attock. Malakand: Chakdara, Malakand, Jalala, Dargai, Mardan. Tochi Field Force: Buner, Saidgai, Kajuri, Idak, Miranshah, Boya, Datta-Khel.

FIGHTING UNITS IN DETAIL.

Tirah Expeditionary Force, October 9th, 1897, *to April 8th,* 1898.

Effective, October 18th, 1897.

Staff and departmental officers	866
European troops	7,967
Native troops	19,713
Followers	19,976

28,546 combatants, 19,976 followers, 49,000 pack animals.

Average Strength by Columns, 1st November, 1897.

1st and 2nd divisions	12,909
Kurrum column	2,671
Peshawar column	2,671
Line of communication troops	5,897
Reserve brigade	2,962
Peshawar and vicinity	8,058
Total,	35,168

Fighting Units in the Field.

Batteries	11
Regiments of cavalry	7
Battalions of infantry	37
Companies of sappers and miners	7

Hospitals.—Field, 16; line of communications, 4; base general, 5; rest depot, 5; field medical store depots, 2.

Transport.—1st and 2nd divisions pack animals, others normal scale.

Distribution of Troops, November 1st, 1897.—Parachinar, Fort Bara, Korappa, Shiniwari, Sadr, Rawal Pindi, Fort Lockhart, Ustarzai, Kai, Hangu, Thal, Sultan, Alizai, Chagru-Kotal, Samana, Kohat, Doaba, Gulistan.

Average Strength, October 9th, 1897, *to April 8th,* 1898.—British officers, 689; British troops, 8,266; Native troops, 16,220; Followers, 11,929. Total, 37,104.

Field and General Hospitals.

Admissions to field and general hospitals	22,109
Died in " "	1,130
" out of " "	222
Discharged to duty	16,852
" otherwise	3,599
Transferred to other hospitals	587
Average daily sick	2,282·01
Ratio per 1,000 admissions to field and general hospitals	595·80
Ratio per 1,000 deaths in field and general hospitals	30·40
Percentage of deaths to strength	3·05
" " to admissions	5·10
" of average daily sick to strength	6·15

Work of the Line of Communication Hospitals—Field and Base General Hospitals.

Admitted and Transferred to	Died in Hospital	Discharged to Duty	Otherwise	Transferred to Base
13,899	457	3,010	364	10,066

Percentage of deaths to admissions and transfers, 3·29.

Base General Hospitals.

Admissions	Deaths	Percentage
11,494	297	2·5

British Troops—ratio per 1,000.

Detail	New Army in the Field, Bengal Mutiny, year 1858		Young Troops in the Field, Tirah Expeditionary Force, 1897-'98	
	Admissions	Deaths	Admissions	Deaths
Cholera	5·0	3·00	0	0
Fevers	1338·3	18·57	392·40	7·30
Heat apoplexy	55·8	17·17	·72	·12
Delirium tremens	6·2	·64	·48	·24
Dysentery	231·7	33·67	58·40	2·05
Diarrhoea	308·5	—	60·90	·36
Hepatic	69·0	5·84	16·90	·48
Phthisis	6·0	2·19	·60	·12
Respiratory diseases	92·3	2·42	34·40	1·33
Venereal diseases[*]	270·6	—	65·40	—
All other causes	725·0	5·92	214·70	5·30
All causes	3,098·4	89·42	843·90	17·30

Regiments in the Field.

Battalions	Admissions	Deaths
1st Royal East Surrey	469	14
2nd Yorkshire	493	27
2nd Derbyshire	495	13
1st Devonshire	525	4
2nd Royal Sussex	269	15
1st Royal Scots Fusiliers	229	8
1st Dorsetshire	318	28
2nd K. O. S. Borderers	489	14
1st Northamptonshire	249	42
2nd K. O. Yorkshire L. I.	229	26
1st Gordon Highlanders	464	16
1st D. C. Light Infantry	212	3
2nd R. Inniskilling Fusiliers	641	3
2nd Oxfordshire Light Infantry	247	11

Total average daily sick	508·18
With each battalion	36·29
Average number of deaths	17·50

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[*] A rigid medical inspection for venereal diseases revealed 769 cases among the 21,688 European troops who proceeded on service in 1897-1898, and 494 broke down during the campaign from its effects.

Native Troops.

Total average daily sick	931·87
With each battalion	22·70
Average number of deaths	4·60

PRINCIPAL DISEASES IN ORDER OF FREQUENCY OF OCCURRENCE.

Field and General Hospitals.

Detail.	Admitted.	Died.
Fevers	7,498	190
Dysentery	3,903	357
Respiratory affections	1,848	265
Diarrhœa	1,293	92
Venereal	1,065	—
Anæmia and debility	901	36
Rheumatism and rheumatic fever	698	1
Hepatic	451	13
Skin	437	2
Eye	167	—
Organs of locomotion	108	—
Nervous System	96	10
Scurvy	65	—
Ear Diseases	36	—
Circulatory	35	4
Erysipelas	10	1
Sunstroke and heat apoplexy	9	1
Alcoholism and delirium tremens	4	2
Cholera	—	—
Pyæmia	—	—
Gunshot wounds	934	78
All others	2,551	78
All diseases	22,109	1,130

REMARKS.

Febrile Group.

Detail.	Admitted.	Died.
Small-pox	2	—
Simple continued fever	76	—
Enteric fever	251	60
Ague	6,659	99
Remittent fever	462	31

There were only 7 admissions for eruptive fevers among the British troops; the 2 only of mild small-pox occurred amongst the native troops; 69 of the 76 S. C. fever were confined to Europeans, and 251 of the 258 cases of enteric. Percentage of admissions to strength—Officers, 4·3; N. C. O. and men, 2·6; 7 deaths, ·87 and ·64 respectively. Mortality in cases treated, 23·7. Cantonments, 1897, 27·1, 3,019 of those admitted for malarial fever were among the Europeans, with only 7 deaths. Dysentery and diarrhœa caused only 20 deaths in the Europeans, 34 amongst the native troops, and were more fatal amongst the followers, 395; only 4 of the 10 admissions for erysipelas occurred amongst the Europeans, and there was an entire absence of wound diseases. Venereal admissions—Europeans, 541; native troops, 255; followers, 287; these were admitted in the earlier phases of the campaign. Scurvy was confined to the native troops and followers, but was of a very mild type. There were only 4 admissions for "drink disease" in 181 days. The 7 deaths from rheumatism all occurred amongst the followers. There were only 161 of anæmia and debility amongst the Europeans, 364 native troops, 376 followers. There were few admissions for nervous diseases, and the deaths were principally due to meningitis. Eye diseases accounted for only 167 admissions, mostly mild conjunctivitis. Diseases of the heart for only 11 admissions, with 2 deaths. Hepatic affections were far less common amongst the followers, only 77 admissions out of 451.

Respiratory Group.

Diseases.	Admitted.	Died.
Tubercle of the lung and phthisis	50	9
Bronchitis and bronchial catarrh	1,121	88
Pneumonia . . .	516	190
Other respiratory affections .	161	8

The admissions for pneumonia were largely in excess amongst the followers, 276 with 131 deaths out of the total, and among the other respiratory affections included in this class were 83 admissions and 6 deaths from chronic bronchitis. The British troops suffered least, the native troops next, and the followers most from affections of the skin.

There were only 9 admissions, and 1 death from heat-stroke, all confined to Europeans; 4 cases of flat foot, and 22 of blisters of feet are recorded only among British troops.

Gunshot Wounds, Admitted and Died in Field and General Hospitals.

Detail.	Admitted.	Died.	Per cent.
Field and general hospitals .	934	78	8·3
In general hospitals .	654	10	1·53

Many of the cases admitted to the field hospitals were mortally wounded, with no prospect of recovery. The result of the treatment in the Base general hospitals was the best ever recorded, as pyæmia, hospital gangrene, and all wound diseases were conspicuous by their absence. From the Tirah Maidan the wounded had to be transported 111 miles before they could be entrained—40 of which, to Shinawari, was in field dandies, and the remaining 72 in ambulance bullock tongas to Khushalgarh. The first stage over two high mountain passes, steep and difficult. The last by rail in ambulance carriages 74 miles to Rawal Pindi, and if proceeding to Nowshera, 78 further.

Regions of the Body wounded.

Head	33
Face and neck . . .	37
Chest	72
Abdomen	55
Neck and spine . . .	35
Perineum, groin, buttocks . .	42
Shoulder	37
Upper extremities . . .	147
Hip joint	6
Lower extremities . . .	292
Arteries	3
Parts not defined . . .	146
Other injuries	9

As in all previous campaigns some battalions suffered disproportionately to others. In the early part of 1898 the 22nd Gurkhas, owing to the severe weather at Fort Lockhart, suffered from bronchitis a good deal. But as a rule the result of exposure to cold and wet and heavy duties, often without tents, predisposed to ague and diarrhœa rather than to chest affections, and rheumatism when these had been latent. The 15th Sikhs and the Royal Scots Fusiliers, who had suffered much from malaria, contracted in the Kurrum Valley in 1897, and the Devonshire regiment, after a tour of previous service in the malarial valley of Peshawar, became ineffective from intermittent fever chiefly.

The preponderance of malarial fevers is very well portrayed in the short note given below by the medical officer who accompanied the 1st battalion, Devon regiment, 1st brigade, Tirah Expeditionary Force:—

"Arrived in Peshawar 1st August, 1897, after an absence from the district of five months spent at Jullundur, the regiment having proceeded there on completion of a tour of duty in the Peshawar district. No fresh draft had arrived from England in the meantime. Half the battalion (A, E, F, H Companies) left the same night to garrison Cherat. Headquarters and wing (B, C, D and G Companies) went out to Bara Fort on 21st August. The wing at Cherat returned on 19th September, and rejoined at Bara on 3rd October.

"Mobilised on 20th September. Left for active service, 8th October. Strength, 739 non-commissioned officers and men. Men left behind on line of communication for baggage guard, &c.:—

Kohat	60	16th October.
Shinawari	63	21st ,,
Mastura Valley	32	25th November.
Arrived at Jumrud		9th December.
Left the Tirah expeditionary force		22nd ,,
Arrived at Jullundur		24th ,,

Number of admissions to hospital	343
Returned to duty	84
Total loss	259

"The large majority of admissions have been from ague. Men apparently in good health, with no cachectic appearance, being suddenly prostrated and unfit for duty.

"The companies that proceeded to Cherat suffered equally with those that proceeded from Bara direct.

"A special medical inspection was made at Bara on the 6th December: strength, 266; considered fit for duty, 176; unfit, 90."

The admissions and deaths amongst the followers were very much more than those which occurred among the troops, and more especially in this expedition, as will be seen in the general summary. The followers for the earlier expeditions were better selected; a large proportion in the latter had been drawn from the famine district of the North West provinces and Oudh, the Punjàb, and Madras, and they were as a rule the dregs of the population of the larger cities, many being either too young or too old. 7,250 of them passed through the hospitals of the expedition, and 788 died out of the average strength of 11,929, as against 345 deaths among the native troops, with an average strength of 16,220.

Percentage of Deaths to admissions by Diseases.

Enteric fever	23·36
Ague	1·49
Other fevers	5·99
Dysentery	9·15
Diarrhœa	7·35
Debility	4·11
Rheumatism	1·00
Bronchitis	5·16
Pneumonia	36·43
Gunshot wounds	8·30
Other complaints	2·28

Followers.

Principal diseases and deaths compared with those of the native troops:—

	Followers, Strength. 16,220			Native Troops, Strength. 11,929		
Detail	Admitted	Died	Per cent.	Admitted	Died	Per cent.
Malarial fevers	2,486	27	·16	1,624	97	0·81
Dysentery and diarrhœa	1,721	34	·20	2,342	395	3·30
Respiratory diseases	656	61	·37	892	192	1·60
Anæmia and debility	864	5	·03	376	20	·17

Ratio per 1,000:—

Detail.	Admissions.	Deaths.
Native troops	595·3	13·7
Followers	607·7	66·0

General Summary.

Detail	British Officers		British Troops		Native Troops		Followers		Grand Total		Ratio per 1,000	
											A.	D.
Average strength	689		8,266		16,220		11,929		37,104		599·37	30·54
Daily sick	43·97		606·67		931·87		699·50		2,282·01			
Diseases and Injuries—	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
Enteric fever	30	6	221	53	6	1	1	1	258	61	6·95	1·64
Ague	85	—	2,765	4	2,321	15	1,589	80	6,610	99	178·14	2·67
Other fevers	36	—	248	4	165	13	102	16	551	33	14·85	·89
Dysentery	38	—	483	17	1,431	29	1,950	311	3,902	357	105·16	9·62
Diarrhœa	30	—	504	3	365	8	393	84	1,292	95	34·82	2·56
Venereal diseases	2	—	541	—	235	—	287	—	1,065	—	28·71	·0
Scurvy	2	—	—	—	42	—	23	—	65	—	1·75	·0
Debility	3	—	141	2	315	3	344	29	803	33	21·64	·89
Rheumatism	3	—	231	—	205	—	258	7	697	7	18·78	·19
Bronchitis	8	—	232	2	432	9	576	53	1,240	64	33·42	1·75
Pneumonia	1	—	50	9	189	50	276	129	516	188	13·91	5·05
Gunshot wounds	51	3	364	33	437	41	96	21	948	98	25·55	2·64
Other complaints	92	3	1,199	17	1,496	21	1,405	57	4,292	98	115·67	2·64
Total	379	12	6,969	143	7,689	190	7,250	788	22,239	1,133	599·37	30·54

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. Volume XIV.: Infectious Diseases. London: Sampson Low, Marston & Co. 1898. 8vo. Pp. 602.

THE "Infectious Diseases" described in the fourteenth volume of *Twentieth Century Practice* are, in sequence—Scarlet fever, measles, German measles, chickenpox, glandular fever, whooping-cough, cholera infantum, cholera nostras, Asiatic cholera, dengue, beri-beri, miliary fever, and Malta fever.

Dr. Frederick Forchheimer, Professor of Physiology and of Diseases of Children in the Medical College of Ohio, Cincinnati, is the author of the articles on scarlet fever and "German measles." On him must rest the responsibility of perpetuating the latter most inappropriate and infelicitous term. The disease is neither "made in Germany," nor entitled in any sense to be called "measles." Although it is only a by-issue, we cannot congratulate Dr. Forchheimer on the elegance or classical standard of his Latinity, of which he appears to be rather fond. "Locus minoris *resistentiæ*," "*strictissimo* sensu," have a flavour of schoolboy Latinity about them, which is unworthy of the author and of the work. The article is in the main an excellent monograph on scarlatina. At this time of day it is hardly worth while to quote such long periods of *incubation* for the disease as 11 and 14 days (Hagenbach), 21 days (Bawy), and 28 days (Trojanowsky). Our own experience, now extending over more than a quarter of a century, fully accords with Murchison's statement that the duration of incubation in scarlatina does not exceed 7 days.

At page 57 the author very aptly says that "the dangers of middle-ear trouble, while greatly exaggerated by the specialists, are nevertheless real. We caught a slip at page 65, where the author, describing the nitric acid test for albumen, observes—"The advantage of the latter test is that it gives one an insight into the quantity of albumin, and at the same time an idea of the presence of *urates*, which form a triangular cone some distance above the junction of the acid with the urine, the base of the cone being deeper in color, the shading gradually becoming less marked as we approach its top." Obviously the word "urates" should be "uric acid," which is precipitated in a molecular form by the addition to certain urines of nitric acid.

Dr. Forchheimer adopts the doctrine of puerperal and surgical scarlatina (page 78), but its truth is open to question. Certainly so-called surgical scarlatina presents many analogies to septicæmia pure and simple, and the same may be said of puerperal scarlatina.

There are some notable omissions from the Bibliography appended to Dr. Forchheimer's monograph. The illustrious names of Graves and of Trousseau, for example, find no place in it, although both these great teachers wrote admirable descriptions of scarlatina in their classical lectures on clinical medicine.

Dr. Dawson Williams, of London, writes fluently and well on Measles and on Glandular Fever—"an acute infectious fever without exanthem, characterised by adenitis affecting especially the anterior cervical glands." His account of the latter disease—the Drüsenfieber of E. Pfeiffer (1889)—is substantially the same as that which he contributed to the pages of the *Lancet* in January, 1897.

In an interesting note on the etymology of the word measles, at page 117, Dr. Williams quotes Dr. Creighton's ridiculous derivation of the word from the low Latin *miselli*, a diminutive of *miser*. He falls into an error in speaking of "the modern Latin term *morbilli*, diminutive of *morbus*," which he states, "probably had its origin in a comparison of measles with smallpox." "I morbilli" is good Italian. So is "il morbo," which means "the plague."

The article on Whooping-cough by Dr. Joseph O'Dwyer and Dr. N. R. Norton, both of New York, is well-conceived and practical. The authors speak of bromoform in the internal treatment of the disease, but apparently not from personal experience of the drug. They quote many favourable reports as to its action in controlling the paroxysms of cough in the disease both in number and in intensity, but they also adduce two cases of bromoform poisoning related by Nolden. Our personal experience of bromoform as a remedy in whooping-cough is not indeed extensive, but it is uniformly favourable. But then we invariably gave the drug in the form of capsules, containing half a minim or a minim, as the case may be. It is very difficult properly to suspend bromoform in a mixture owing to its high specific gravity—which is 2·9, double that of chloroform. This constitutes the danger of the drug. It goes to the bottom in an ordinary mixture, and so the final doses may be poisonous. The authors speak approvingly of the treatment introduced by Bergeon in 1887. This consists in the administration of carbonic acid gas by the rectum. Without influencing the duration of the disease, this method reduces the number of paroxysms of cough, causes the whoop to disappear, and stays vomiting. "Runabouts" is a picturesque way of describing those patients who (with much advantage to themselves) are fortunate enough to be able to spend their time out of bed and in the open air.

One of the ablest articles in the volume is that on Cholera Infantum, by Dr. A. Jacobi, of New York. It embraces an excellent section on "Normal Feeding" under the heading "Prophylaxis." Surely the word "prodromi" (page 241) is a mistake for "prodromata"? When discussing the ætiology of the affection, Dr. Jacobi points out how detrimental to infant health are sustained high temperature and high atmospheric humidity. Warmth and moisture combined cause the baby's food to ferment, producing deleterious ptomaïns; but these factors also paralyse the infant's nervous system, causing the characteristic gastric and intestinal disturbances, over-secretion and non-absorption. The author's views on the paralytic origin of the symptoms of cholera infantum are in accord with the observations of Dr. Clarke Miller (1879), and of Meinert, of Dresden (1893). Elaborate articles on Cholera Nostras and Asiatic Cholera come from the pen of Dr. Theodor Rumpf, Director of the New General Hospital in Hamburg, and formerly Professor at the University of Bonn, and Director of the Polyclinic at Marburg. He writes with the terrible experience of the Hamburg epidemic of 1892 fresh in his memory. A notable feature in this monograph on cholera is the very full account of the bacteriology of the disease which it contains. At page 348 there is this significant sentence—"The frequent occurrence of cholera nostras by the side of Asiatic cholera cannot, however, be denied in view of the experiences at Hamburg." Another instructive incident is recorded at page 350. In the latter part of August, 1893, cholera broke out afresh in Hamburg, a small epidemic embracing 151 cases with a death-rate of 27·8 per cent. There was no fresh importation of the disease, but at the time of the outbreak the temperature of the Elbe water had risen to 20° R. (77° F.), and in consequence of a break in the pure-water aqueduct, unfiltered Elbe water was supplied to the city. In this water the cholera germ must have passed through a stage of development which most probably consisted in a multiplication of the bacilli in consequence of the increased temperature of the water " or of some other favourable change."

"Cholera," says Dr. Rumpf, "is essentially a poisoning of the system with the toxins of the comma bacilli."

The section on treatment is admirable. Dr. Rumpf strongly advocates the use of aperients in the early stages of cholera, but only for a day or two. Castor oil and calomel are the drugs he recommends. This treatment of choleraic diarrhœa with purgatives has for its objects the radical removal of the comma bacilli from the intestinal canal, and the probable anti-bacterial effect produced by the formation of a small amount of mercuric chloride in that canal. Dr. Rumpf speaks approvingly of and describes the tannic acid enteroclysis introduced by Cantani, of Naples, in 1870. He particularly recommends von Genesich's modification of this method—namely, an irrigation of the digestive tract from the rectum upwards, called by him *diaclysmus.* As much as from 5 to 15 litres of a 1 to 2 per 1,000 solution of tannic acid is allowed to flow into the bowels, heated to 38° or 40° C. (104° F.), and at a pressure of 80 to 100 cc., the anus being tightly compressed around the rectal tube.

The last four articles in this volume are on Dengue, by Sir Joseph Fayrer, Bart., F.R.S., London; Beri-beri, by Dr. A. A. de Azevedo Sodré, Professor in the Faculty of Medicine of Rio de Janeiro, editor of *O Brazil Medico*; Miliary Fever, by Dr. A. Netter, Physician to the Hôpital Trousseau, Paris, and Professeur agrégé in the University of Paris; and Malta Fever, by Major David Bruce, M.B., C.M., Pietermaritzburg, South Africa.

From Fayrer's description of dengue, we are at a loss to understand how any physician can advocate the view that this disease is only a developmental form of influenza. We thoroughly concur with the author when he says that "there is considerable resemblance between scarlatina and dengue during the initial stage."

The article on beri-beri by Sodré will be read with interest by Dublin physicians, whose attention has been directed to this disease by its endemic prevalence in the Richmond District Lunatic Asylum within recent years. The author narrates, at page 483, a striking existence of the permanence of the disease in "a collective dwelling," notwithstanding the removal of the patients and rigorous disinfection. It is a fact worthy of note that the disease lingering in the asylum is almost exclusively limited to the female department. Certainly the facts adduced by Professor Sodré are strongly in favour of a telluric infection.

"Miliary Fever" is defined as "an *endemoepidemic* affection almost exclusively confined to certain regions of France, Italy, Germany, and Austria; it is a disease of very variable gravity; its chief symptoms are profuse sweating, a peculiar eruption, and certain special nervous phenomena." Dr. Netter believes that the formidable epidemics described under the name of "English sweating sickness" (*suette anglaise*) were identical with miliary fever.

From the foregoing analysis, the importance and interest which attach to this volume of *Twentieth Century Practice* will be apparent. It is a worthy companion of the volumes which preceded it, and gives promise of equally valuable succeeding volumes.

Forensic Medicine and Toxicology. By J. DIXON MANN, M.D., F.R.C.P.; Professor of Forensic Medicine and Toxicology in Owens College, Manchester; Examiner in Forensic Medicine in the University of London and Victoria University; Physician to the Salford Royal Hospital. Second Edition, revised and enlarged. London: C. Griffin & Co. 1898. Pp. 683.

WHEN reviewing the First Edition of Professor Dixon Mann's Forensic Medicine we expressed the opinion that it was much the best English work extant on the subject. Frequent study of its pages only confirmed and increased our sense of its excellence. We are very pleased to see that a new edition has appeared, as it shows that the book has been appreciated by many others besides ourselves, and also because, good as the first edition was, the second is better.

This edition shows signs of having been carefully and thoughtfully revised in all parts. Space has been gained by the use of smaller print in some paragraphs, of which some relate to matters of less general importance (*e.g.*, some of the rarer poisons), and others give accounts of judicial decisions or of cases of medico-legal interest. There is much more reference made to cases in the law courts, and many of them are described at considerably greater length than in the first edition.

We find entirely new sections on the Obligation of Professional Secrecy, on Sudden Death from Natural Causes, on Blood Poisons, and on the Post-mortem Imbibition of Poisons.

Some additional poisons are described in this edition, such as trional, bromoform, and creolin.

Although it really contains considerably more information than the older edition, it contains only 44 more pages, space having been gained by judicious condensation.

Some mistakes which we noted in the first edition have been corrected. We, however, still find a few. Copper arsenite (Scheele's green) is $CuHAsO_3$, not $CuAsO_3$ as here given. We would hardly agree with the universal scope of the statement that "digitalis is badly tolerated in cases of fatty or *weak* heart." The points, however, which we would like to see altered are very few, and do not detract from the excellence of the book.

Whenever anyone asks us "What is, in your opinion, really the best book on forensic medicine?" we unhesitatingly reply, "Professor Dixon Mann's book."

A Manual of Surgery for Students and Practitioners. By WILLIAM ROSE, M.B., B.S. Lond.; F.R.C.S., Professor of Clinical Surgery in King's College, London, and Senior Surgeon to King's College Hospital, &c.; and ALBERT CARLESS, M.S. Lond.; F.R.C.S.; Senior Assistant-Surgeon to King's College Hospital, and Teacher of Operative Surgery in King's College, London, &c. (University Series.) London, Paris, and Madrid: Baillière, Tindall & Cox. 1898.

ON account of the very evident fact that "the many large and valuable text-books and works of reference already in existence are almost more than the ordinary student can master during the time at his disposal," the compilers of the present portly octavo have accorded to themselves the task carried out in this volume of endeavouring "to present the facts of surgical science in a concise and succinct form, so as to satisfy the needs of the student, even of those who are preparing for the higher examinations." The wants of the general practitioner have also not been overlooked, so that both grades of the profession may successfully seek for the written requirements of their practice.

We thoroughly sympathise with the authors in their observation that "The main difficulty has been to compress into a small space the ever-increasing amount of material available, so that we have only been able to sketch in outline much that could have been elaborately described did the size of the book permit." And we think that they have acted with judgment when, as they proceed to inform us, "For the same reason, historical and bibliographical references have to a large extent been omitted, whilst diseases of special regions—such as the eyes, ear, and female genital organs—are also practically excluded, except in so far as they encroach on the domains of general surgery."

We cordially congratulate the authors on the completion of their self-imposed task. The result lies before us in the form of a really beautiful octavo of viii and 1162 pages, exquisitely printed and richly illustrated. How we would have gloated over such a manual in our own student days! The heavily-burdened five-years' medical student of the present period has, after all, much to console him in the form in which his mental pabulum is served up. The illustrations number 392, and the index occupies 18 pages. The whole is got up in the very best style of the splendid "University Series" now in course of publication by the eminent firm of Messrs. Baillière, Tindall & Cox.

As in the case of all the works which have hitherto been executed by the hand of man, the captious critic could point out small flaws here and there, in the material or the finish. For instance, we find on page 392 the beginning of a section which deals with "Transverse Supracondyloid Fracture" (of Humerus.) We are told that it involves "the shaft about 1 or 2 inches above the joint . . .," and the next sentence proceeds to inform us that "the accident is very common in children, then taking the form of a separation of the lower epiphysis." We trust that in the next edition these two sentences will have undergone radical modifications. On page 455 we find "Displacement of a Semilunar Cartilage," and the phrase "internal derangement of the knee-joint" offered as one of the synonyms. The authors should consult Hey's original description of the latter.

But we will not allow ourselves to proceed further on this line. The very strong admiration which this volume has excited in our minds makes us desirous to see it reach our standard of perfection. It comes very near, and we trust that the next issue will make it almost, if not quite, up to our ideal.

We cordially recommend it as the best-prepared single-volume text-book of surgery we know of. The word "prepared" in this instance refers to authors, publishers, printer, and bookbinder.

A Manual of Physics, being an Introduction to the Study of Physical Science. Designed for the Use of University Students and Advanced Classes in Secondary Schools. By WILLIAM PEDDIE, D.Sc., F.R.S.E.; Assistant to the Professor of Natural Philosophy and Lecturer on Advanced Experimental Physics in the University of Edinburgh. Second Edition. London: Baillière, Tindall & Cox. 1898. Pp. 573.

THIS work treats of physics mainly from the theoretical point of view. But little space is given up to a description of experiments, and hardly any figures of apparatus are introduced, while, on the contrary, the mathematical side of the subject is described at considerable length. In this second edition the author states he has entirely re-written the mathematical portions, and has used none but those elementary methods which may be readily followed by any intelligent schoolboy. We have always had respect for the intelligent schoolboy, but since we have seen Dr. Peddie's book our respect has changed to awe.

The book is clearly and well written, and will be found to contain in small space a very large amount of information.

Rheumatoid Arthritis; its Pathology, Morbid Anatomy, and Treatment. By GILBERT A. BANNATYNE, M.D., Glas.; M.R.C.P., Ed.; Hon. Physician to the Royal United Hospital, and to the Royal Mineral Water Hospital, Bath. Second Edition. Illustrated. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1898.

THIS second issue of a work which treats in a very original fashion the phenomena of what we had previously looked upon as a decidedly threadbare subject, gives the author the opportunity of advancing more emphatically his views of this very common, and, accordingly, very important disease. As he tells us in his preface, "it will be noticed that further experience and observation have led me, as well as others, to believe yet more firmly in the bacterial theory as to the origin of the disorder, and have also caused me to conclude that there are at least two separate forms of disease at present classed under the term rheumatoid arthritis—the one acute, and undoubtedly microbic in character; the other chronic, and probably degenerative." The author is a thorough, and we may add, a conscientious, master of his subject. He gives us its literary history, the general—and his own special—notions of its pathology, the symptoms, diagnosis, and treatment. The volume is very tastefully got up, extremely well printed—on exceptionally good paper; and is furnished with really beautiful, as well as instructive, illustrations. The one of the latter which we care least about is that from which we would have been disposed to expect most—Plate I., "Skiagraph of the Bones of the Hand in a Case of Rheumatoid Arthritis." It shows astonishingly little! But we consider almost everything else in the volume good, and we cordially recommend its perusal to our readers.

Aids to Examinations in Medicine, Surgery, Midwifery, and the Allied Sciences. Part II. By T. RENELL ATKINSON, M.D., Dunelm. London: Baillière, Tindall & Cox. Edinburgh: Livingstone; Thin. Dublin: Fannin & Co. Glasgow: Stenhouse.

"This little book, containing questions and answers in anatomy, physiology, medicine, surgery, midwifery, gynæcology, and public health, will, we trust, be found useful alike to the student and the practitioner." We think that this hope of the writer has been fulfilled. The small volume has been produced in the best style of the eminent publishers, Messrs. Baillière, Tindall & Cox; and is, we think, perfectly suited to fulfil the function for which it was professedly intended—that of an *aide-mémoire.*

PART III.

SPECIAL REPORTS.

REPORT ON PRACTICE OF MEDICINE.

By Henry T. Bewley, M.D. Univ. Dubl.; F.R.C.P.I.; Physician to the Adelaide Hospital; and Lecturer on Forensic Medicine and Hygiene, Trinity College, Dublin.

(Continued from page 329.)

VIII. THE TREATMENT OF RHEUMATOID ARTHRITIS.
IX. THE TREATMENT OF RHEUMATISM WITH METHYL-SALICYLATE.
X. A NEW TEST FOR BILE PIGMENT.
XI. RADIOSCOPY OF STOMACH.
XII. THE USES OF SALOPHEN.
XIII. ON TANNALBIN.
XIV. THE PREVENTION OF CINCHONISM.
XV. ON STRETCHING THE PNEUMOGASTRIC.

VIII. MEDICINAL TREATMENT OF RHEUMATOID ARTHRITIS.

Dr. Bannatyne (*Edinburgh Medical Journal*, January, 1898), believing rheumatoid arthritis to be due to a micro-organism, has been employing some of the newer drugs belonging to the phenol group of antiseptics. He thinks creosote, or some of its compounds and derivatives, to be the most useful. He employs creosotal (carbonate of creosote), guaiacol carbonate, and benzosol (benzoyl-guaiacol $C_{14}H_{12}O_3$). The dose of creosotal is 5 minims daily, increased gradually to 20 minims. It may be administered in capsules, or else made into an emulsion, with yoke of egg. Guaiacol carbonate may be given in powder, cachet, or pill, in doses of 5 to 15 grains three times a day, rapidly increased to six times a day.

Benzosol is given in 4-grain doses three times a day, increased to 6 as the patient becomes used to it. These drugs decompose in the intestine, and the absorption takes place gradually.

The effect of the drugs is seen almost from the first; the pains become less, the swellings diminish, and the heat of the skin over the joints goes; the general body temperature falls; the patients often say they feel quite different beings. The improvement in the circulation can be seen by the more natural hue of the hands replacing the former cold, dripping, blue, and asphyxiated look.

The patients take their food with more relish, and it is better assimilated. Insomnia disappears.

Even in advanced cases, with great destruction of tissue, constant care and the free use of guaiacol, combined with bathing and dietetic regimen, will ultimately subdue them, and Dr. Bannatyne believes the improvement to be permanent. The only complication telling against the free use of guaiacol carbonate is nephritis, and the author is not quite convinced that even then there is danger.

The author believes these drugs act by favouring the elimination of toxic albumins. Along with the internal administration of these remedies, Dr. Bannatyne uses pure guaiacol and olive oil in varying proportions for external application. When applied to the joints affected, this produces a feeling of numbness in the skin over the joints, and relieves the pain in the joint itself, giving rise to a sense of coolness and a feeling of relief. Usually he applies a mixture of guaiacol and olive oil in equal proportions, painted on to the affected joints nightly. Should the smell be objected to, 5 to 10 minims to the ounce of oil of cloves masks it to some extent.—*Med. Chron.*, March, 1898.

IX. TREATMENT OF ARTICULAR RHEUMATISM BY THE LOCAL APPLICATION OF SALICYLATE OF METHYL.

Siredey (*Presse méd. belge*, Bruxelles, 28th July, 1897) draws attention to this method of treating articular rheumatism, although it is by no means new, having been first tried by Bochefontaine in 1879. Methyl-salicylate is a volatile, mobile liquid, of a penetrating but not disagreeable odour, which is little felt if the parts to which it is applied be carefully enclosed in gutta-percha, and then bandaged.

One or 2 drms. should be applied to each joint, and up to half or 1 oz. may be employed, without causing disagreeable systemic effects. Siredey thinks that good results are obtained by the application of not more than about 2 drms. altogether at one time. Beyond producing slight redness, it does not irritate the skin locally. It contains 90 per cent. of salicylic acid, while sodium salicylate contains 80 per cent. By this method of application any irritation of the stomach is avoided, and ringing in the ears, &c., have been only rarely observed. This immunity is probably due to slowness of absorption from the skin, which prevents any great accumulation in the blood at any one time.

After considerable experience, the author thinks that administration of salicylate of sodium by the stomach is much preferable in acute polyarticular rheumatism, unless in cases where it seriously disturbs digestion. But in chronic and subacute cases, especially in the joints of the extremities, he prefers the local application of methyl-salicylate, as he finds its action more efficacious on the whole, and more persistent. In gouty joints he finds that it also lessens the swelling and pain.—*Ed. Med. Jour.*, Dec., 1897.

X. A NEW TEST FOR BILE PIGMENT.

Prof. Gluzinski (*Wiener klinische Wochenschrift*, December 30th, 1897) has found that when formalin is added to bile and the mixture boiled for some minutes an emerald green colour is obtained; when a few drops of a mineral acid are added, especially hydrochloric, the colour becomes amethyst violet.

The author regards formalin as a much more sensitive test for bile pigment than those usually employed.

As a reaction for bile pigment in the urine the test is carried out in the following manner:—

A few cc. of urine are placed in two test tubes. To the urine in the second test tube, one-third of the volume of formalin is added, and the mixture boiled from three to five minutes. If bile pigment be present an emerald green colour is obtained, and this can be seen well by comparing the two test tubes. The depth of the colour varies according to the amount of bile pigment present. One-half of the fluid in the second test tube is then placed in a third tube, and a few drops of strong hydrochloric acid are added; an amethyst violet coloration is produced. If the three test tubes be compared then, we find that the fluid in the first tube has the colour of the urine being examined; the fluid in the second tube has a green colour; the fluid in the third tube has an amethyst violet colour.

This test is more sensitive than the ordinary Gmelin's test. A urine containing bile which gave both Gmelin's reaction and Gluzinski's formalin reaction was diluted with water 1:10; no reaction was then obtained by Gmelin's test, whilst a reaction was obtained with formalin when the urine was diluted with water, in the proportion of 1:100–140.—*Med. Chron.*, March, 1898.

XI. A NEW METHOD IN THE RADIOSCOPY OF THE STOMACH AND INTESTINES.

I. Boas and M. Levy-Dorn recommend (*Deutsche med. Wochenschrift*, 1898, No. 2) an ingenious method. Gelatine capsules are filled with metallic bismuth and then covered with celluloid, making them insoluble. To aid recovery from the stools the capsules are coloured with a non-poisonous aniline dye. The capsules are 2¼ cm. long, 1¼ cm. wide, and weigh when full twelve grammes. They are readily swallowed, and in none of the fourteen persons experimented on were any symptoms produced. The capsules are readily seen (in thin persons) with the radioscope; the position in the abdomen may thus be recognised, but the exact part of the alimentary tract can, of course, be determined only within certain limits. Practically, it was not difficult to know when the capsule was in the fundus of the stomach, or in the cæcum, because it remained there longer than in other positions. In the small intestine the progress seemed to be rapid, and when the capsule was found in the left iliac fossa it was evacuated within twenty-four hours, indicating its presence when seen before in the sigmoid flexure.

The capsule usually disappeared from the stomach within twenty-four hours in patients with mild gastric symptoms, and was then found in the cæcum; but in obstruction of the pylorus it remained as long as four or five days in the stomach.

The possibilities of this method of examination are evidently great. The motion of the intestinal tract in health and disease, and under the influence of various drugs, especially those like creosote, alcohol, strychnin, bitters, and cathartics, can be studied with advantage, though, as the authors remark, conclusions as to the motion of the usual ingesta must be drawn with caution.—*Am. Jour. of Med. Sci.*, Ap., 1898.

XII. THE USES OF SALOPHEN.

Dr. Drews (Hamburg) in a paper in the *Therap. Monatshefte*, March, 1898, comes to the following conclusions:—

1. Salophen is a perfectly harmless drug, and can be administered to the amount of 45 to 90 grains a day for long periods. Larger doses are useless, as they are not absorbed.

2. It has no taste or smell, and so can be easily taken in the form of powders, tabloids, or pills. It may also be given in cachets.

3. Salophen passes through the stomach without suffering any change, and causes no gastric disturbance. In the intestine it is slowly broken up into salicylic acid and acetylparamidophenol, so that the system is kept continually under the influence of salicylic acid *in statu nascendi.* No accumulation of salicylic acid occurs, so that there are no unpleasant consequences resulting from its use.

4. Salophen is a very useful drug in the treatment of rheumatism. On both the acute and sub-acute varieties it has as good an effect as salicylic acid (salicylate of sodium), and has this advantage, that it causes no unpleasant after-consequences.

5. On chronic articular rheumatism it is not better than the drug in ordinary use.

6. It is useful in relieving neuralgia and pain (headache, migraine, toothache, intercostal neuralgia, sciatica, the nervous form of influenza, &c.).

7. Salophen is useful in the treatment of chorea.

8. It has a very good effect on various skin-diseases in which itching is a marked symptom (prurigo urticaria, diabetic pruritus, eczema, &c.).

In some of the skin cases, as well as giving 90 grains daily, Drews applied a 10 per cent. ointment of salophen, with vaseline and lanoline. This treatment he found useful in psoriasis. He believes that the drug, taken internally, is in part excreted by the skin.—*Therap. Monatshefte*, Mar. 1898.

XIII. TANNALBIN IN CHILDREN'S DISEASES.

Dr. J. Csemanski states that tannalbin, as employed in Prof. Ganghofer's clinic in Prague, is a very useful astringent in various kinds of intestinal catarrh in children. The dose used in the case of infants up to three months was 3 to 4½ grains three or four times a day; in the case of older children, up to the age of ten years, 7 or 8 grains may be given as a dose, and repeated three or four times daily.—*Prag. med. Wochenschr.*, 24–27, 1897.

Weiss observed 54 cases treated with tannalbin in the Zurich Children's Hospital, and 21 in the Policlinic. The majority were over three years old; 53 were completely cured, and 10 relieved. The doses given in the case of young infants were 3 or 4 grains, two or three times daily in mild cases, and every three hours in severe ones; in the case of children of from two to five years, 20–35 grains were given daily, divided into three or four doses. The drug should be given for a day or two after the diarrhœa has ceased. The drug is a brown tasteless powder, and was always readily taken by the children without the addition of sugar, dissolved in milk, wine, or water.—*Korr. Bl. f. schweitz., Aerzte* 15, 1897.

Roemheld recommends that tannalbin should be given to children when diarrhœa comes on during the administration of cod liver oil, plain or with phosphorus. When 30–120 grains a day were given, the stools rapidly regained their normal appearances. It is less useful in diarrhœa caused by the administration of creosote.—*Münch. med. Wochenschr.*, 36, 1897.

Professor Vierordt of Heidelberg strongly advocates the use of tannalbin in cases of acute and chronic intestinal catarrh, and also in tubercular diarrhœa.

Tannalbin is a brown, tasteless powder, containing about 50 per cent. of tannic acid. It is insoluble in the mouth and stomach, but on meeting with the alkaline secretions of the intestines it is resolved into its original elements, tannin and albumin.

The action of the drug on most of the cases of diarrhœa treated was most remarkable, causing very rapid diminution in the number of the motions and in the quantity of mucus passed. The dose for children varies from 4 to 8 grs. The writer places tannalbin without hesitation in the first rank of astringent preparations, and regards it as a most reliable drug in the treatment of all kinds of diarrhœa, whether simple or tubercular, and it possesses the advantage of causing neither dyspepsia nor loss of appetite. From the experience which he has had of the administration of tannalbin, he considers it a more reliable drug than bismuth in the treatment of infantile diarrhœa.—*Deutshe med. Wochenschr.*, Leipzig, 1896, No. 25, and *Ed. Med. Jour.*, Jan., 1898.

XIV. THE PREVENTION OF CINCHONISM.

An editorial in the *Therapeutic Gazette* says that within the last few years they have referred to the untoward effects produced by various drugs, and have called attention in particular to the disagreeable after-effects which often ensue when quinine is administered. With the more moderate of these effects nearly everyone is familiar, for the laity often prescribe quinine for themselves in such large doses that they speedily experience the tinnitus, or deafness and headache which full doses of this drug so readily produce. There are two ways in which these disagreeable symptoms may to a certain extent be modified by combining with the quinine other remedies. The oldest way, and the method which is perhaps resorted to most frequently, is the administration with each dose of quinine of five or ten grains of bromide of potassium or bromide of sodium, which seem, to a considerable extent, to modify the aural symptoms which we have mentioned. If the dose has been a very large one, and the patient is particularly susceptible to quinine, it may be well to give at the same time with the quinine a little fluid extract ef ergot for its tonic effect upon the cerebral and meningeal blood-vessels. Another method for the prevention of cinchonism is that which has been suggested by Aubert within the last few months. He asserts that the administration of atropin in the dose of 1-250 to 1-150 of a grain with each dose of quinine greatly modifies the symptoms, and in those cases where the quinine was given for the relief of neuralgia aided the quinine very materially in relieving the pain. It must be remembered, on the other hand, that in those who have a susceptibility to atropin the dryness of the mouth and throat and the disordered vision which may ensue after this dose of the drug might prove more uncomfortable to the patient than if the quinine had been administered alone.—*International Med. Magazine*, March, 1898.

XV. STRETCHING THE PNEUMOGASTRIC.

M. Jaboulay (*Lyon médical*, April 17th; *Presse médicale*, June 15th) has stretched the pneumogastric in two cases. The first was in a patient, sixteen years of age, affected with frequent epileptic attacks which disappeared after the operation. The second was a case of exophthalmic goître accompanied by paroxysms of cough. Resection of the cervical sympathetic was decided upon, and advantage was taken of the opportunity thus afforded of stretching the vagus and acting upon the sympathetic fibres associated with that nerve. The disease was greatly ameliorated. The procedure is the same as that for exposing the sympathetic, and unilateral stretching is sufficient. M. Jaboulay thinks that this operation will prove of great service in certain inflammations of the lung and in certain troubles of deglutition having a nervous origin.—*N. Y. Med. Jour.*, July 9, 1898.

PREPUTIAL DIPHTHERIA.

The author (Post), in the *Jour. of the Boston Soc. of Med. Sci.*, describes a case of diphtheria of the prepuce occurring in a man who had cared for diphtheria patients in his family. A "blister" first appeared within the prepuce and phimosis occurred. The phimosis was freed for incision, and diphtheritic membrane covered the wound. The prepuce sloughed. Bacilli like those of diphtheria were found, and the patient developed ciliary paralysis and paralysis of the arms and legs.—*Post Graduate.*

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

Our Senses, and how they Serve Us.[a] By PROFESSOR KINKEAD, A.B., M.D.

(Continued from page 269.)

THE indications given by the thinker to the thought reader's trained perception are very distinct to him, for the fixation of thought on the number of the bank note, or hidden pin, and the watching the attempts at solution of the problem, produce an emotional state, exciting the sympathetic, and the hands become hot or cold, dry or moist, while the muscles move as the reader slowly writes down the number or hunts for the pin; if the thinker's mind wanders the indication ceases, and then you can hear the operator say, "You are not thinking of it. I can't do it unless you think of it and nothing else."

Having given examples of keenness of sensation, I shall now produce proofs of involuntary and unconscious guiding. Some years ago a gentleman gave, in Galway, a demonstration of the tricks of spiritualists, and an exhibition of thought-reading. I may mention that I saw most of what he showed us afterwards in Amsterdam, palmed off by an American lady as genuine spiritualistic manifestations, and I naturally felt very pleased to have had proved that all the lady alleged the spirits did was really done by trained sensory-motor action. For his thought-reading experiment he was blindfolded and taken out of the room, during his absence I hid a ring, on his return he was conducted to where I was standing, he took my left hand and held it to his forehead, and having implored me to think only of the ring, and where it was hidden, started off: but we got no forwarder as regarded the ring, only collided with several unoffending spectators. He then said I was not thinking of the ring. I assured him I was, but that I would think harder. I did, but not exactly as he intended, for I had noticed that so long as my hand remained perfectly passive, he either stopped or went any how. If I pressed my hand softly against his he went forward, if against his forehead he stopped or went back, if towards myself he turned to the right, if from me he bolted to the left; he simply followed the slightest indication I gave. Finally, of course, I led him up to the ring, which he found amidst great applause.

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[a] A lecture delivered on January 14th, 1898, before the Literary and Debating Society of the Queen's College, Galway.

Now the guidance which I knowingly gave is generally given unconsciously, and the guides are perfectly sincere in stating the ethical truth, but logical falsehood, that they gave no guidance at all; for the concentration of attention upon a certain idea gives it a dominant power, not only over the mind, but over the body, and the muscles become the involuntary influence whereby it is carried into operation.

A good many years ago, table turning and spirit rapping were popular crazes, and there was hardly a household where the table did not turn, while the Delphic oracle was simply "not in it," either with regard to the subjects on which the tables were consulted, or the faith with which the replies rapped out were received—so much so that there was a widely expressed conviction that the whole thing was a manifestation of Satan's power.

The *modus operandi* was:—The performers placed their hands on the top of the table round its edge, and they should be so many in number as to form a complete chain of hands. Whether the table should turn from left to right, or *vice versâ*, was settled beforehand; the operators were to preserve profound silence and keep wishing the table to turn in the direction decided on. In a short time the table started. If the persons were sitting the revolution only continued the length of their arms; generally they got up and followed it, and it was an exhilarating spectacle to see a number of respectable and apparently sane persons madly waltzing round the room after the table, and holding on for bare life. One and all vowed they did not push the table one little bit, yet that it was moved by the hands placed upon it was demonstrated by Professor Faraday's indicator.

As there is always a tendency for defunct crazes to revive, and as even at the present day spirits are not above utilising the leg of a table to knock out puerile and badly-spelt communications, you may find it useful to know how this indicator should be constructed. It is neither complicated nor expensive—a couple of boards, the size of a quarto sheet of paper, a couple of small rulers or pencils, a couple of Indian-rubber bands, a couple of pins, and a slip of light wood or cardboard eight or ten inches long. The rulers being laid on one of the boards, a little distance from and parallel to the sides, the other board is placed on the rulers, so that it rolls on them from side to side, and to keep the machine together, and prevent too great freedom of motion, the Indian-rubber bands are placed over both boards. One of the pins should be placed upright in the lower board close to the middle of its further edge, the corresponding part of the upper board being cut away to prevent its bearing on the pin, and the second pin should be fixed in the upper board a couple of inches back from the first one. Then the strip of wood or cardboard is attached to them, so that the pin in the lower board forms a pivot. Any lateral motion given the upper one causes the long projecting arm of the slip of wood, or index, to move in the opposite direction.

Now when, the index being taken off, the indicator was placed on the table, the latter moved as gaily as ever, but when the index was left on, either the table did not move, as the slightest pressure was betrayed by the index, and any movement given was checked at once, or if the table did go, the index by its deflection showed very clearly that pressure was being exerted.

If a button or ring be suspended from the end of a finger or thumb, so that when slightly oscillating it shall strike against a glass tumbler, it will be found to swing, and to continue swinging, as to strike the hour of the day, after which it ceases to swing far enough to make another stroke. To make the experiment succeed, it is essential for the experimenter to know the hour of the day and to look at his finger and the ring or button, for the persistence of the vibrations in the proper direction only take place so long as they are guided by the visual sensation.

Rather more than forty years ago, when no inconsiderable portion of the British public was amusing itself by swinging buttons or rings at the ends of its fingers, a Mr. Rutter, of Brighton, discovered that if a ball were suspended from a metallic frame, itself considered a fixture, and if a finger were placed on the frame, very definite movements, similar to those of the ring suspended from a finger, were set up; and that these movements varied in direction and intensity if the operator laid hold with his disengaged hand on other individuals or bodies. Needless to say these movements were attributed to odic or electrical force, or spiritual influence. But a Dr. Madden, a homœopathic practitioner at Brighton, conceived the happy idea of testing the intelligence of the magnometer, as it was called, with regard to the character and efficacy of his globules; globules in hand, he consulted the machine, and as long as he knew what globules he held it replied, according to his view of their efficacy, by longitudinal or transverse movements; but when he tried its power without himself knowing what globules he held, it went all astray, and he was forced to the conclusion that the replies were only his own anticipations of what they should be.

Another popular deluder of the same kind is the divining rod: a forked hazel stick, the forks being grasped in the hands of an expert, the distal end shall dip where there may be water or minerals under the surface of the earth: undoubtedly the stick moves, but it does so by the intentional or unconscious motions of the hands of the operator; that it may chance to dip where water may be found, or a vein of mineral exists, redounds to its credit, while its mistakes are ignored, except, perhaps, in the case of the American village I read of in the papers a few days ago, the inhabitants of which, for a fee of £50 and expenses, brought out a hazel stick performer from England to indicate for them where water existed. He indicated for them several places, but our American cousins, though they have bored far below the level designated, have not got the water yet; neither to their regret have they the gentleman with the rod; if they had there is good reason to believe that rod would not be required to indicate subterranean water supply, but would be used according to King Solomon's advice; for whether the indications were produced by volition or unconscious muscular movements, the application of the aphorism—"a rod for the back of fools"—would be equally appropriate.

A not uncommon trick of an Indian fakir is to take a light table—one, for instance, which can be lifted with ease on one finger—and to say—"Now, Sahib, I will make this table so heavy that you cannot lift it." He then makes passes, and mutters incantations over it, all the time, however, watching the Sahib's face; time is no object with him, and he works away until he judges from the expression of the Sahib's face that he has fixed his attention and secured his belief. "Now," he says, "the table is so heavy you cannot stir it." The Sahib gets up and tries, but he cannot move it; he does not give up, but struggles valiantly until he breaks the table. There is no magic in this, although the fakir says there is. How do I know? I have tried and found out how it is done.

I had hypnotised a lady, and, remembering the fakir's little game, I handed her a book. "Do you know what that is?" I said. She looked at it and replied, "Of course I do; it is a Bradshaw." "Are you able to lift it?" I asked. "What a foolish question," she answered, tossing it into the air and catching it, "do not you see I am." "I only asked you," I rejoined, "because I am going to make it so heavy that you will not be able to lift or move it." She laughed and said, "You must think me a very foolish person if you expect me to believe anything so silly." I placed the Bradshaw on the table, made a few passes over it, and said, "It is now so heavy that you can neither lift nor stir it, no matter how hard you try." She approached the table, smiling, but the moment she touched the book her expression changed to one of profound astonishment, for she could not move that book, although not only her fingers but her whole body worked with the exertion she put forth. She could not move it, because she was pressing on it with her whole weight while she thought she was trying to lift it, the dominant idea compelling her muscles to press down. This is what happens in the Indian trick; and it is a curious illustration of what poor observers we are, that out of the many that witness or take part in it scarcely one individual notices that the table is invariably broken down.

For our senses to serve us effectively, each one must not only be trained (as feeling is in the thought-reader to interpret the indications rendered by the subject), but each sense must co-operate with the others, otherwise our senses shall deceive us.

Sight originally informs us only of what can be seen in a picture—that is, of a plain, variously shaded or coloured, the notions of form, which we obtain through the sense of touch, are originally unrelated to those derived from sight; thus, when a blind adult first acquires vision, objects which are most familiar to him through touch are not recognised by sight, until the two sets of sense-impression have been co-ordinated by repeated experience.

Of how the sense of touch when not corrected by sight may deceive, you can satisfy yourselves by a very simple experiment—Place a marble, or pea, in the palm of one hand, shut your eyes, cross the first and second fingers of the other hand, place them on the marble, and roll it about; you will feel two marbles, and if someone else had placed the marble in your hand, you would swear there were two; and on opening your eyes, and finding there was only one, you would be inclined to believe that by some hocus pocus the other had been removed.

The eyes learn to judge of distance by the aid of the muscular sense—of the muscles of the eye-balls, as well as of those of the arms and legs; and the perception of solid form, or relief, derived from the mental conception of the dissimilar perspectives, which are projected by solid objects upon our two retinæ, is acquired by us during our earliest years by a co-ordination of our muscular and visual sensations, which, when once established, enables sight usually to form correct judgments of form, solidity, and distance; but just as touch without the aid of sight often leads us astray, so sight alone frequently deceives us.

At the back of the high altar in Antwerp Cathedral there is a mezzotint picture, executed to imitate half relief; so perfect is the deception that I utterly failed to convince two friends who were with me that it was a picture and not sculpture.

Take a common paste-board mask, paint the inside so that the colours of its different parts shall imitate as closely as possible those of the corresponding parts of its exterior; hold it at arm's length from the eye, with the light so arranged that no shadow falls anywhere upon it, not only will the image of the projecting face very readily present itself, but it will be difficult for the observer, who has once caught this, to see the mask as it really is.

So far I have spoken of sensory-motor impressions produced from without; but such impressions, being registered in the brain cells, can be recalled into activity, even after long lapse of time, not only by, but without, fresh external stimulus.

That these impressions shall be registered usually requires their frequent repetition. We are all aware that what is rapidly learnt is forgotten as quickly: thorough apprehension, by which what is learned is made a portion of the mental fabric, is a much slower process, well worthy of the time spent upon it, benefiting not only the learner but also those with whom he may be associated, as can be testified by those of us who have listened to the lectures delivered to this Society by Sir Thomas Meffett, wherein he has delighted us with his oratory, charmed us with his learning and the play of his fancy, and excited our wonder at the magnitude and accuracy of his memory when, without even the aid of notes, he has recited from recollection passage after passage from the speeches and writings of Burke, Sheridan, Johnson, and Goldsmith.

Occasionally, however, by some shock or crisis in our lives, impressions are suddenly registered with such strength that, as we say, they are never forgotten.

As sensory-motor activity depends on molecular change in the nervous tissue, so molecular changes themselves are dependent on the circulation in the nerve centres of blood, pure in quality and in proper proportion as to quantity. In man, although the brain is not ordinarily more than about one-fortieth of the weight of the body, it receives about one-fifth of the whole circulating blood. Any interference with the quantity of blood going to or leaving the brain, or impurities in the blood, produce startling effects on our sensory-motor mechanism.

The circulation of the blood is mainly governed by the sympathetic system, which, although it may originate independent action, is controlled and influenced by the brain. According as the sympathetic centres are stimulated or depressed, the blood vessels are contracted or relaxed; and not only is the flow of blood accelerated or retarded, but the blood supply to a part of the body is affected.

An example of this is afforded when a third party inopportunely intrudes on these operations which, I am credibly informed, occur at Christmas time under the mistletoe. I prefer not to speculate as to whether it is being under the mistletoe or the intrusion of the third party which produces the effect, but the sympathetic is shocked, the minute blood vessels are dilated, the supply of blood to the face is increased—in short, they blush.

Of the effects of excitation and depression of the sympathetic, I have seen some striking examples. It has been my unfortunate fate to have seen many men hung and many under sentence of death; in the latter I have been present when the announcement of the commutation of the death penalty was made. At first, on hearing the news, the face became perfectly white; a moment or two after an intense blush would commence, not gradually colouring the cheeks, but climbing upwards from the neck, the line of demarcation between the white and red as distinct and clearly defined as the edge of a knife; as it travelled up the lower half of the face was a brilliant red, the upper a dead white; when it reached the top of the head the perspiration gushed out, and the man fell.

If the cerebro-spinal and sympathetic are acting in harmony, if we are in health, and, above all, if we have properly and methodically trained them, our senses serve us faithfully and well; if, however, the contrary be the case, they play us tricks, and if we do not keep them under control our senses cease to serve us and become our masters, and, though very good servants, they are uncommonly bad masters. No slave, however brutal his master and intolerable his servitude, is so demoralised, or such an object of pity, as is the man or woman who has become a slave to the senses.

Time does not permit me to do more than lightly touch on the tricks our senses play us, the deceptions they palm off on us, with confirmation strong as proof of Holy Writ, and the popular delusions which have arisen therefrom. Though each sense plays its part in the comedy or tragedy, the eye is the chief offender.

The entire fault, however, is not always attributable to the senses alone; it may be due to disease, as, for example, the hallucinations and delusions of the insane; it may arise from poison in the blood. Such are the hallucinations and delirium of fever; the weird visions of the opium, or the fantasia of the Hachisch, eater; or commonest and, perhaps, saddest of all, the horrors of the alcoholic.

Apart, however, from disease or poison, our senses are sometimes deceived and not always the deceivers.

Expectant attention is a fertile source of deception. If you are watching for someone, or expecting something to occur, or you have formed a decided opinion, your senses play up to you.

Thus, if living in the country a mother is expecting her son back from college, it is not why tarrieth the wheels of his chariot; they are plainly to be heard when no chariot is on the road at all. Or the wife of one's bosom, or she "who ran to catch us when we fell, and kissed the place to make it well," smells fire, or gets burglars on the brain; she wakes us from our first sleep, and needs must we have got to find the fire, or fight the burglar; so, with what poor courage we may summon up—and I know nothing which takes the courage out of a man equal to bare legs and diaphanous garments—fortified by the poker, we have to start off. Now this call to arms does not altogether arise from pure fancy; the idea of fire re-exciting olfactory sense-impressions, the smoke or odour of burning is smelt, or the idea of burglars stimulating auditory sense-impression, the opening of doors and stealthy footsteps are heard. While thus the idea may spring from the brain, fully armed like Minerva from the skull of Jupiter, it may also arise in response to suggestions which are produced by cats, or mice, or rats, or by the house itself; for, especially on calm nights, houses do go on "that dreadful"—the window weights go off with a bang, the floors crack, the furniture creaks, but commend me to the stairs for imitating a stealthy step steadily stealing up.

"If," said the marchioness to Mr. Dick Swiveller, referring to orange-peel in water, "you make believe very much, it's uncommonly nice." She gave utterance to a sound, general principle, for if attention be sufficiently concentrated so as to create a dominant idea, we can see, hear, taste, smell, or feel anything we want to—nay, more, we can produce actual structural change in our bodies.

When no metal lighter than water was known, Dr. Pearson, as he poised on his finger the first globule of potassium produced by Sir Humphry Davy's battery, exclaimed, "Bless me, how heavy it is," though when thrown on water the metal floated.

Proof that disordered digestion, mistaken or misinterpreted sense-perception, expectant attention, or suggestion, produce hallucinations of sight and hearing, does not in the least shake the conviction of the person who has been favoured with a visit from a ghost. Now, there are some very curious things about ghosts; they are supposed to come back from "the undiscovered country from whose bourn no traveller returns," and yet they know as little about it as we do. They keep most disreputable hours; even the ghost of the highly respectable citizen, who despised a latch-key and went to bed at ten, wanders about after twelve o'clock at night; and, strangest of all, they bring back with them their old clothes. One could imagine them clad with airy nothings, but rational beings must draw the line at old clothes or ancient armour.

The evidence that ghosts and spirits materialised by mediums, and the visitors who come to warn mortals that a friend has just died, are the products of sensory-motor reaction is abundant. Sir Walter Scott relates that a Captain C—— riding over one morning to see his confessor found him very ill of a dangerous complaint, and he returned home in great apprehension of his friend's life. At the hour of retiring to bed, to his great astonishment, he saw in the room the figure of the absent confessor. He addressed it but received no reply; he advanced towards the phantom, which retreated gradually before him; he followed it round the bed, when it seemed to sink down in an elbow-chair. Determined to probe the matter fully he sat down in the chair too, and thus satisfied himself that it was an illusion. I may mention that the confessor recovered. Sitting down on the apparition seems to have been as satisfactory in his case as the method adopted by a man who was visited nightly by the spirit of his wife, who informed him she was not dead but in the power of the fairies, and instructed him how he should proceed to get her back. Disregarding her advice he promptly married another lady and never saw the ghost again.

An intimate friend of an illustrious poet lately deceased, during the darkening twilight of an autumn evening, was perusing a publication, in which he was deeply interested, which professed to detail the opinions and habits of the illustrious dead. On laying down his book and passing into the entrance hall, through which the moon was beginning to shine, he saw right before him in a standing posture the exact representation of his departed friend. He stopped for a moment to wonder at the wonderful accuracy with which fancy had impressed on the bodily eye the peculiarities of dress and posture of the dead poet, and then stepped onwards. As he approached, the figure resolved itself into a screen occupied by great coats, shawls, and plaids.

Dreaming is a fertile source of such spectres. The fact that the vision is the waking continuation of the dream is denied, because the person forgets the dream or is sure he has not been asleep.

When I was living in Tuam my bedroom faced the east, and as I used to sleep with the windows and shutters open and blinds drawn up, the morning sunlight streamed into the room. One summer's morning I woke up about six o'clock and saw a gentleman standing beside my bed; I not only saw him as distinctly as I ever saw anyone in my life, but I noticed the sunlight glittering on the hairs of his beard. We were intimate friends, but my first thought was that it was confoundedly cool of him to come up to my bedroom like that. I wondered how he had got in without my hearing him, more especially as on looking past him I saw the door was shut. I then sat up in bed and said rather angrily, "What the dickens brings you here at this hour of the morning?" when to my surprise he vanished. My wife woke up at the sound of my voice and asked me whom I was talking to. When I told her she insisted on my going off at once to my friend's house, as she was sure he was dead and had come to notify me of the fact. It was no use my urging that if he was the moment the fact was discovered somebody of flesh and blood would come for me. I had to go; found him all alive, and as little pleased to see me as I had been to see him an hour before. Moreover, his apparition did not presage an early death—he has had a successful career, for he has been the husband of three wives, successively of course, and I had a Christmas card from him this season.

That such visions, the products of our senses, are regarded as visitations from the dying, is a widespread delusion. If by chance the vision coincides with a death, it is proof positive that the popular belief is right; when, on the other hand, as more frequently happens, no death occurs, that counts for nothing. Furthermore, many of the alleged coincidents are more than the baseless fabric of a vision; invention clothes them with the elements of circumstance, time, and place.

At one time ghostly education had not progressed as far as the relationship of longitude to time, so that if a death occurred at 3 30 p.m. in India, or on the shores of the Pacific, the apparition appeared exactly at 3 30 p.m. by Greenwich time in England. Education has now, however, improved, and the apparition does not come half a day too soon or too late; it makes the proper allowance for longitude. I read some time ago a very detailed and circumstantial account of such an apparition—that of a young man at sea, whose death was alleged to have been unknown when, and for a considerable time after, his wraith was seen. Full particulars of the dress, the gestures, the expression of countenance were given, being clearly perceptible by the light of an exceptionally brilliant moon. The only thing the narrator had forgotten when writing the yarn was to consult an almanack—there was no moon that night.

Nor does the fact that several people affirm they too saw the ghost or spirit materialise make it a bit more credible, for apart from wilful deception, which mediums are adepts at, suggestion is quite sufficient to make the bystanders see visions and dream dreams. If anyone in London, for instance, went into Hyde Park, and gazed up fixedly into the sky, he would very soon have a crowd round him, all of them, except those picking his pockets, gazing upward too, and asking what he was looking at. It would not be necessary for him to reply, and very soon many of the crowd would see things—some an eagle, some a balloon, some a star, and so on. If the original observer said "It is a kite," many present will agree that it is so, and describe its size and shape.

When during the conflagration at the Crystal Palace in 1866–67, the animals were destroyed by the fire, it was supposed that the chimpanzee had escaped from his cage, attracted to the roof with this expectation in full force. Men saw the unhappy animal holding on to it, and writhing in agony to get astride of one of the iron ribs. Its struggles were watched from below with breathless suspense, or, as the newspapers described it, with sickening dread. But there was no animal there at all—only a torn and tattered piece of blind.

Suggestion is, perhaps, the most powerful factor in giving to airy nothings a local habitation and a name, and its action is clearly demonstrated by the phenomena of artificial hypnotism. In this condition the will power is in abeyance for the time being, and any idea suggested becomes dominant, and the suggestion which, as it were, creates the idea may be conveyed to the brain through any of the paths of sensation.

Time, however, does not permit me to tell you of the extraordinary acuteness to which sense-perception can be raised in the hypnotic state, nor of the contrary condition, when all the senses save one can be sealed up; nor of muscular rigidity; nor, indeed, of most of the manifold manifestations which can be produced; and compels me to limit myself to narrating a few examples of hallucination from my own experience.

I suggested to a hypnotised subject that she was suffering from neuralgia; at once one side of her face flushed, her eyes became suffused, and she complained of intense pain. "Now," I said, "you must take a dose of quinine." After objecting on the grounds that it was so nasty, she assented to do so, on my assuring her it would cure her. I gave her a little water in a wine glass, and she made the exclamations and faces usual on such occasions, and then said the pain was gone. I then woke her up, forgetting to suggest that the taste of the quinine was gone too, whereupon she reviled me bitterly for taking advantage of her condition to make her swallow some nasty bitter stuff, appealed to those present as to whether it was not most unfair, rushed off to get something to take the taste out of her mouth, and would not be convinced that she had taken nothing but water. On coming back to the room she said, "I will take care you do not play such a trick on me again, for I will keep walking about." While she was doing so I said, "What is the matter with your left leg?" "There is nothing the matter with it," she replied. "Yes, there is," I said, "it is quite stiff." It immediately became rigid, and dragged after her as she walked. "Now the other one is stiff," I said, and she became rooted to the spot. "Someone is tickling you," I suggested. She screamed with laughter, writhed and wriggled, pushing off with her hands imaginary tickling fingers, exclaiming—"Oh, do stop! Oh, please stop! I shall go into a fit if you don't."

These are two well-marked examples of the creation by vocal suggestion of a special sense and ordinary sense-perception. The next illustration is of the production of hallucinations of sight and hearing in another subject.

I said, "You want to write a letter to so-and-so." She got up and went towards the writing table, which was at the further end of a large drawingroom, the only light in which was a lamp with the usual drapery on it, so dear to the hearts of the womenkind of our households, on a central table. After advancing a few steps she said, "I cannot write, there is no light." "That is easily remedied," I said. "Now the candles are lit." "Thank you," she answered, went to the table, wrote the letter, brought it over to me and said, "Will you kindly post it for me," then went towards her seat, stopped, and looked over at the writing table, and saying, "I will not write another letter to-night, so it is no use leaving those candles burning," walked over and deliberately blew out each one of the unlighted candles. I then said to her, "There is a knock at the door." "So there is," she replied, "I wonder who it can be." "Why it is Miss So-and-so," said I, "come to pay a visit, but you will not be able to hear a word she says." She got up, shook hands with the imaginary visitor, said how glad she was to see her, how good it was of her to call, asked her to sit down, drew her chair near the visitor's, and entered into conversation; presently, she turned round to me and whispered—"What a very stupid person; she will not say a single word."

But suggestions, either single powerful ones, or repeated weaker ones, often act as effectually in the ordinary normal state.

Of this we have a wonderfully effective description from the master-mind of Shakespeare in Macbeth. The suggestion of the weird sisters starts the dominant idea which, taking possession of the minds of Macbeth and his wife, compels to the deep damnation of Duncan's taking off. The visual hallucination of the dagger, which he sees "as palpable as this which now I draw," before the crime, and that of Banco's ghost after, are powerfully drawn instances of sense-perception produced by excited and perverted mental action.

But suggestions capable of originating dominant ideas come from inanimate objects. I knew a little chap just able to walk and speak who used to be brought off for supper and bed at six o'clock, and the time was fixed by the ringing of the Angelus from the Jesuit church near by. I have seen him playing in the summer time in the garden alone. As soon as the bell began he would stop short, begin to cry, and calling out, "That is my own bell; I won't go in, I won't go in," begin to run towards the house. At first he would pause between the strokes, to be shot on by the next clang of the bell. Increasing his pace as he went he would rush into the house all the time exclaiming, "I won't go in, I won't go in."

True it was a child's will which was thus overcome and driven to force him to do what he had determined not to do. But do we not find weak wills in adults, of whom we pityingly say, "Poor fellow, he is easily led;" and wills of the strongest potentialities may either have never been developed by training, or become so enfeebled by neglect, self-indulgence, or sloth that sense-suggestions easily control them.

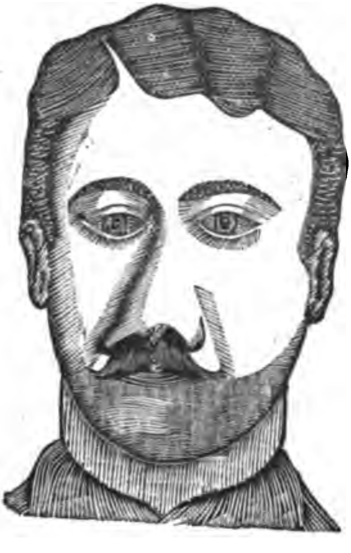
As self-control, self-denial, and discipline are essential to the development and perfection of our moral nature, so if we wish our senses to serve us rightly to be active, intelligent servants, ministering to the perfection of our bodies and the growth and fulness of our minds, we must train them to accurate perception, to co-ordination, to obedience to the will; for this self-control, self-denial, and discipline are also essential, and bearing this in mind we are able to appreciate in a wider sense than the mere words apply these lines of Longfellow's:—

"St. Augustine, well hast thou said
  That of our vices we can frame
A ladder, if we will but tread
  Under our feet each deed of shame.
All common things, each day's events
  That with the hours begin and end,
Our passions and our discontents,
  Are rounds by which we may ascend.
The low desire, the base design
  That makes another's virtue less,
The revel of the ruddy wine
  And all occasion of excess.
The longing for ignoble things,
  The strife for triumph more than truth,
The hardening of the heart that brings
  Irreverence for the dreams of youth,
All thoughts of ill, all evil deeds
  That have their root in thoughts of ill,
Whatever hinders or impedes
  The action of the nobler will.
All these must first be trampled down
  Beneath our feet if we would gain
In the bright field of fair renown
  The right to eminent domain.
Standing on what too long we bore
  With shoulders bent and downcast eyes,
We can discern, unseen before,
  A path to higher destinies;
Nor deem the irrevocable past
  As wholly wasted, wholly vain,
If rising on its wrecks at last
  To something nobler we attain."

CLINICAL RECORDS.

Severe Traumatic Nasal Disfigurement, with Obstructive Deflection of the Septum, Cured by Forcible Reposition and a Plastic Operation. By JAMES R. WALLACE, M.D., F.R.C.S.I.; formerly Resident Surgeon, Medical College Hospital, Calcutta.

CASE.—Mr. E., a well-built, healthy Scotchman, was thrown from his horse during Christmas week in 1896. He fell on his face and sustained a fracture of the nose, which broke the bridge and the septum, and flattened this markedly aquiline organ very badly. The accident happened in a mofasal station about six hours' run by train from Calcutta. The parts became very much swollen and were very tender, and nothing was done to adjust the broken nose, though sedative and refrigerating lotions were applied to reduce the swelling and give relief to the pain that followed the injury. Mr. E. came to Calcutta to have the nose attended to ten days after the fall, and it was then that I saw him. The swelling had subsided, and I found the nasal bridge and septum broken and crushed down, giving the nose a flattened appearance, while the orifices of the nostrils—more especially the right—were disfigured and thereby almost closed, obstructing respiration. The following diagram fairly represents the condition described.



After locally anæsthetising the parts with cocain,' I lifted the nasal arch with a dressing forceps, and plugged the nares with borated cotton, till the nose was made to assume its normal shape.

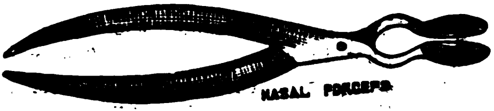
As Mr. E. had urgent work at his station, he returned home next day, with instructions to allow the station doctor to replug his nose after four days. This was carried out, and after a fortnight nothing further was done for the nose, as it seemed all right in shape. Gradually, however, the organ became ill-shaped and the septum seemed to deflect to the right side; till it became quite crooked, and at the same time the right nostril was so choked and blocked that the patient could hardly breathe through it at all. He returned to Calcutta in March, 1897, and I saw him in the condition above described. I advised an operation to straighten his nose, but as I could not get the special instrument and appliance I needed for it in Calcutta, I suggested that as I was visiting London I would get them there, and perform the necessary operation on my return to Calcutta. Accordingly Mr. E. came to this city on the 23rd November to undergo the operation, and as some nervously-disposed friends of his had doubts as to his fitness to be chloroformed, a consultation about his case was held with Professor O'Brien, F.R.C.S. What I purposed doing was explained fully to Surgeon-Colonel O'Brien, and while he frankly advised his friends that there was no danger with chloroformisation or with the operation, he as frankly stated that the procedure was a delicate and difficult one, and was *not* likely to prove successful. Dr. O'Brien aptly put it as a case of

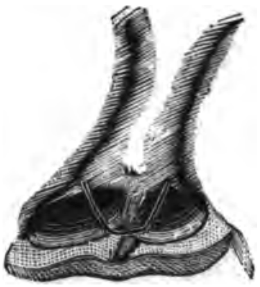
> "Humpty Dumpty sat on a wall,
> Humpty Dumpty had a great fall,
> All the king's horses and all the king's men
> Couldn't set Humpty Dumpty together again."

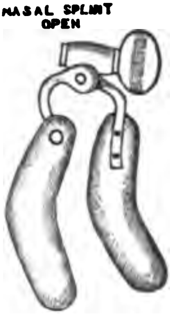
However, it was admitted that an effort ought to be made, and the patient was quite willing that it should be made.

On the 24th November, Mr. E. was placed under chloroform by Dr. Fermie, L.R.C.P. & S. Edin., and, as I anticipated very free bleeding, I had Dr. K. G. Sircar, M.B. Edin., to assist me at the operation, and Mrs. C. Deefholts—one of my office assistants—was present to afford further help if needed. Before plugging the nares, to obviate the backward flow of blood into the mouth, and after thoroughly washing the parts, the septum pliers—as shown in the diagram below—were adjusted to the septum, and this structure was forcibly re-fractured and twisted into position.

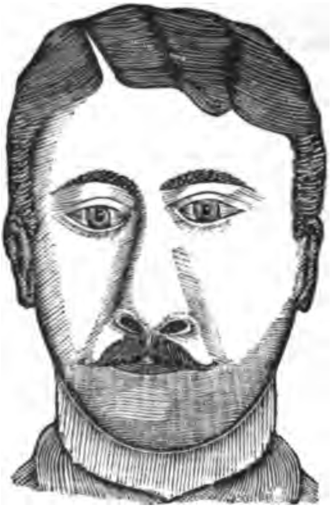
The instrument (which was made for me by Messrs. Down Bros., Borough, London) answered admirably in repositing the septum and in lifting up and straightening the nose. It was necessary to make a semi-circular incision from one nostril to the other to set free the septum and to transplant it into the mesial line. The cut passed deeply beneath the septum, cutting into its crushed and distorted basal cartilage quite one-third of an inch. The diagram below shows the line of incision and the reposition of the septum by the deep intermaxillary wire suture. Very free bleeding ensued and was stopped by pressure with boric cotton pads. To transplant the septum it was found necessary to cut away a piece of the floor of the left nostril, and to fix it into this new bed with a deep silver wire suture, which was made to grip through the structures over the intermaxillary junction and out through the lip, firmly fixing the septum in a line with the median point of the upper lip. Another wire suture was affixed to the left and one to the right side of the septum and the nasal floor of either side. Finding the right nostril still blocked by ragged remnants from the dislocated septum, I cut them away freely and thus cleared the obstructions to the now open right nostril. The bleeding being thoroughly arrested by steady gentle pressure, the plugs in the nares were removed, the parts freely insufflated with equal proportions of iodo-







form and boric acid, and the nasal or septum splint, also kindly made for me by Messrs. Down Bros. (see diagram), was adjusted. This appliance very perfectly supported the septum, and by packing the nostrils on either side with boric cotton wool smeared with boro-zinc ointment the nasal organ was kept in excellent shape. The packing was changed on the second day after the operation, and then daily, while the nostrils were carefully irrigated with boric acid solution and insufflated with iodoform at each dressing.



The patient made a capital recovery without a single untoward symptom, and with a nose which (as seen by the above diagrams, drawn twenty days after the operation), to all intents and purposes, is as good as it was before the accident. It is noteworthy to remark that the reposition of the septum perfectly removed all respiratory obstruction, and this proves its objective success, while æsthetically it afforded complete satisfaction to the patient. On the 25th January, 1898, when I last heard about the patient, I learnt that the nose was perfect in every way. I am much indebted to Dr. Fermie for the careful administration of chloroform; to Dr. Sircar for his able help at the operation; to Nurse O'Reilly for her gentle care of the patient after the operation; and to Nurse E. Davis for the sketches from which the diagrams were prepared.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Edward H. Bennett, M.D., F.R.C.S.I.
General Secretary—John B. Story, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—Sir William Thomson, President of the Royal College of Surgeons.
Sectional Secretary—John Lentaigne, F.R.C.S.I.

Friday, April 1, 1898.

Mr. Henry Gray Croly in the Chair.

Cases of Intestinal Obstruction from Malignant Disease of Large Intestine, with Note of Case of successful Resection of Colon for Cancer.

Mr. John Lentaigne detailed three cases of acute intestinal obstruction from malignant disease which he had treated systematically as follows:—First, a careful exploration of the abdomen was made, followed by the formation of an intestinal fistula at a point above the obstruction, and so placed as to be least likely to interfere with a subsequent operation for radical cure of the disease. As the seat of disease in each of the three cases was the sigmoid flexure, the fistula was made in the cæcum.

In the first case the relief was so great that the patient unfortunately refused to allow any operation for radical cure, probably because the bowels resumed their normal function eleven days after the completion of the intestinal fistula; the latter then gradually closed of itself. Nine months later the patient came back to hospital. The fistula had then reopened, and the bowels were acting freely through it. Large masses of cancer could be felt through the abdominal wall. This patient died 13 months after the operation.

In the second case an operation for radical cure by resection of the cancerous mass, with end to end anastomosis after the method recommended by Professor Kocher, was performed three months after the fistula had been completed. The result was most satisfactory. The patient had enjoyed excellent health ever since, and as two years had elapsed since the resection it was not unlikely that a complete cure had been effected. Although the result had proved so satisfactory, Mr. Lentaigne considered that this patient had remained away much too long before having the operation for radical cure, which should be performed not later than six weeks at most after the formation of the fistula.

In the third case the patient had delayed very much longer, not returning until eight months later on. She was then most anxious to have something done, and accordingly an exploratory laparotomy was performed. It was found that the disease had spread far and wide, and was absolutely inoperable; the abdomen was closed, and the patient left hospital shortly after, the bowels acting freely through the fistula. She was no better for the last operation, but neither was she any the worse.

Mr. Lentaigne had intended to have performed temporary enterotomy with immediate closure of incision at the primary exploration, but had not found this measure necessary, the incision in the intestine only being made after adhesions had formed. As it was most likely from the symptoms that a cæcal fistula would be required, he had made the primary incision over that viscus. In case of doubt, however, he would make a median incision, and subsequently by cutting down on his hand, introduced into the abdomen, he would make the opening for the fistula at the opposite side to the seat of disease, and as far from it as possible, so as to allow room for an aseptic operation for radical cure later on.

Where a separate opening in the abdominal wall was made for exploration, or for the radical cure, the use of celloidin as a dressing was found to be of great use in effectually preventing contamination by discharges from the fistula. These wounds were closed by three tiers of sutures—the deepest of fine silk for the peritoneum, the middle of strong silk for muscles and fasciæ, and lastly catgut sutures for the skin. Over these last a strong coat of celloidin was painted, which was renewed once or twice after two or three days. No other dressing was needed, except a soft pad to prevent friction with bed clothes. At the end of nine or ten days the celloidin peeled off, with the superficial half of the catgut suture closely adherent, the deeper half being absorbed and the wound quite healed. The cæcal fistula was found to be quite as efficient as an artificial anus, and much more satisfactory, inasmuch as it closed of itself when the obstruction below it was removed. It left the bowel in the most favourable condition for resection, as no obstruction could result from paralysis of the bowel while it was open. The strain and tension of the newly-sutured bowel was avoided, and the bowel itself was free from the extreme contraction so likely to follow after the formation of an artificial anus. Lastly, an artificial anus would require quite a formidable operation for its own cure, in case of a possible radical cure of the original disease, while the cæcal fistula had not required any surgical procedure at all. In each case it had closed of itself when the bowels acted normally.

In all three cases the condition of the patients at the first operation was such as to make it most unlikely that a radical cure could then safely be attempted. The procedure adopted would be quite inadmissible. When gangrene or perforation existed in such a case immediate resection or some such procedure would be required.

A Case of Enterectomy for Intestinal Infarct.

MR. GORDON read a paper on a case of hæmorrhagic infarction of the small intestine which he had treated by resection. The patient recovered.

The leading symptoms were—1. Sudden onset, marked by severe abdominal pain; 2. Vomiting; 3. Prostration bordering on collapse; 4. A tumour formed by a distended coil of gut, easily palpated in the right iliac region. There was no general abdominal distension.

Operation was performed twenty-four hours after the onset of pain. Much bloody fluid was found in the abdomen, and the coil of distended bowel was black. Two feet of small intestine were resected, together with an area of mesentery. The ends of the gut were united over a bone bobbin. An intestinal fistula formed ten days later, but had completely closed at the end of three weeks from date of operation. This was in August, 1897, and up to the present there had been no evidence of abdominal trouble.

Mr. Gordon discussed the pathology of the lesion, and referred briefly to the record of similar cases by various authors. In his own case the important questions arose—Was the condition in any way related to a preceding strangulated hernia on the same side? and, secondly, could tertiary syphilis, which the patient presented unmistakable evidence of, have taken any part in its causation? Mr. Gordon suggested that the strangulation might have determined the occurrence of a syphilitic arteritis in the locality of the hernia. In support of this he quoted from Mr. Hutchinson—"In almost all (tertiary affections) we see good reason to believe that in addition to the syphilitic taint some localising influence takes an important share in evolving the local changes."

The paper concluded with a few words in reference to treatment.

Mr. Wheeler agreed with Mr. Lentaigne in advocating a fistula before performing the operation for cancer of the rectum or excision of the bowel for malignant disease. Such a proceeding allowed a patient already run down in health to regain strength before excision of the bowel. He thought it a happy thing that bobbins would probably be required no longer since the discovery of Maunsell's method. He had, unfortunately, lost two cases by Murphy's button, to which he thought the result was due. The best result of excision of the large intestine he had ever seen was obtained by the late Dr. Kidd, and he, having excised the bowel for about six inches, sutured the bowel over a scoop cut out of a piece of carrot.

Dr. Harrison Scott said he had reduced an acute strangulated hernia in the case to which Dr. Gordon referred. On hearing of the subsequent obstruction he suspected that there were some bands from the former condition, but none were afterwards found. He thought the infarct was due to tertiary syphilis. In 1891 he had operated on a lady with a small tumour in right iliac fossa. On performing a laparotomy a tumour of the cæcum was discovered. The cæcum, with a small piece of ileum, was removed, and the ileum sutured to ascending colon. The case went on well for eight days, but then became collapsed, with normal temperature and rapid pulse. No bobbin was used. Death occurred in an hour. *Post-mortem* showed that the suture had given way, and extravasation of intestinal contents into abdomen followed. He mentioned a second case, in which he found peritonitis about the cæcum, with a tumour of colon near splenic flexure. A perforation of the colon was found at the seat of stricture. He was not able to make an artificial anus about the cæcum, as it was bound down by adhesions, but performed a resection of the cancer. He had never found the results of a direct colotomy favourable. He had performed only three resections of the intestine, and had used direct suturing. He had an objection to the use of any bobbin. He found that with two continuous sutures—first, a perforating one, and then a peritoneal one—a good junction could be obtained, and there was less risk of subsequent trouble.

Mr. R. Glasgow Patteson congratulated Mr. Lentaigne on his cases, and agreed with him on the advisableness of immediate suturing. He had no doubt that the misfortunes in Dr. Gordon's case were due to the bobbin. Deaths with Murphy's button, or other form of button, were recorded as due to secondary shock, but in these cases no *post-mortem* had been made, and, therefore, secondary shock was a condition with which he was not familiar. Such deaths he thought were due to septic peritonitis. He considered artificial means utterly unsurgical, and were simply devices to save the operator from his want of surgical technique.

Mr. Henry Gray Croly mentioned a case on which he operated for a tumour in region of cæcum. On cutting down a sarcomatous tumour was found. The tumour was adherent on every side, and could not have been removed by an incision on the opposite side. On exploration it burst, and proved to be the cæcum, with the intestine, but there had been no previous symptom of obstruction. The tumour was excised, and ileum brought to colon directly. Death occurred in three days. *Post-mortem* showed a leakage above the suture, where there was a perforated space. With reference to Mr. Scott's remarks, he did not think that he (Mr. Croly) had ever seen any bands which would set up symptoms of strangulated hernia a second time. He had had eighteen successful consecutive cases of colotomy, and had never regretted doing the operation. Colotomy relieved in a most remarkable way a man with cancer of rectum by staying the progress of the disease, and taking the fæces through a different channel. By keeping the patient alive for a year or so, it was all that surgery could do. He never understood what secondary shock was.

Mr. Lentaigne, in reply, said he agreed with Mr. Gordon as to the probable cause of the slough in his case. He did not employ Murphy's buttons, and considered their use likely to lead to ignorance of proper technique. He thought a surgeon should depend on his suturing and not on any mechanical treatment. Unless a man could suture securely he should not operate. Mr. Croly had misunderstood him in inferring that his incision for cancer should be on the opposite side of abdomen. His incision for the fistula should be on opposite side of abdomen, so that the fistula could act efficiently at a safe distance from the incision for radical cure, which should be made later on directly over the cancer. With regard to Mr. Croly's remarks on the duration of life after operation for cancer, his (Mr. Lentaigne's) second case was still living and perfectly well—that was for a period of two years after the operation.

Mr. T. E. Gordon, replying, said that although he used the

Ball's bobbin, yet he wished it to be understood he did not use his means of suturing. He thought it unsatisfactory to make such a wholesale attack upon bobbins and other mechanisms, as some of the speakers had done. All operations with bobbins were by no means on the same lines. He thought, however, that Murphy's button was open to all objections brought forward. In some cases the button was used to hasten the operation, where purse-string sutures were used for the first row, and over that a second row of subserous sutures, very carefully applied. He did not consider that the best means, and would not use it again. Again, the bobbin was sometimes used merely as a means of support to the line of suturing and to facilitate the operation. In this case the first and second rows of sutures were applied with the same care. This was Mr. Robson's method.

SECTION OF PATHOLOGY.

President—J. M. Purser, M.D.

Sectional Secretary—E. J. McWeeney, M.D.

Friday, May 6, 1898.

The President in the Chair.

Adeno-Carcinoma of the Mamma.

The Secretary, Dr. McWeeney (for Mr. Wheeler), described this specimen, and demonstrated the slides which presented the typical microscopic appearances of this condition—a plexus of glandular tubules, most irregular in shape, occasionally filled up with epithelium, elsewhere cystic, and presenting small papillomatous ingrowths. In places the basement membrane had been broken through, and irregular masses of epithelium were lying free in the connective tissue. The cells were mostly high-columnar, but in some groups were nearly cubical, and presented typical examples of the conditions described by Hansemann as anaplasia and hyperchromatosis. To the naked eye the tumour resembled a lymphatic gland, being soft, white, egg-shaped, and distinctly encapsuled. The microscope showed that in one spot the tubular structure had broken through the capsule, and just begun to invade the adipose tissue outside. The tumour had been removed from a lady aged sixty-seven, and had been noticed a year prior to operation.

Dr. E. H. Bennett said the case reminded him of one which occurred in his practice three years ago. The tumour in his case was perfectly freely movable, non-adherent to skin or tissues of the gland. Both he and his colleague thought it benign. The lady, thirty-five years of age, was in the third month of pregnancy at the time, but as the tumour was growing rapidly, though still believed to be benign, he removed the tumour. It was encapsuled, and shelled out quite easily. Perfect recovery in six days. Subsequent examination of tumour proved it to be a most malignant adenomatous carcinoma, rather a carcinoma than an adenoma. In less than two months the tumour recurred. There was no enlargement in the axilla, but it was clear that the tumour was of a similar character, and was adherent to the scar. He removed the breast and tumour, and glands in the neighbourhood, without meeting any infected tissue in the glands. The operation was severe, and was almost immediately followed by abortion. Recovery ensued, and at present there is no sign of recurrence. No doubt, the entire removal at first operation would have been the proper course. He thought that the doubtful cases, where the tumour is encapsuled, are about the hardest to diagnosticate in cases of disease of breast.

The Secretary, in reply, said that Dr. Bennett's case interested him much. The condition of an undoubtedly encapsuled tumour proving to be malignant is of a considerable amount of clinical interest. He could not refrain from congratulating Mr. Wheeler on taking away the tumour "in the nick of time," as it would have spread immediately. So far as the sections prepared went, there seemed to be healthy tissue all round the cancerous portion, so he had the best hope that no recurrence would follow the operation.

Three Cases of Addison's Disease.

Dr. A. R. Parsons described three cases of this disease.

Dr. Craig said that he thought those present were left in rather a haze as to what Dr. Parsons meant by the term Addison's disease. He thought the second case the only one of the three which seemed to agree with all the symptoms which go to form a picture of Addison's disease. In the third case there was malignant disease, from which the man died, and that the suprarenal capsules were involved seemed merely an accident. With regard to the cause, there were two different schools, one of which considers that disease of the suprarenal capsules produces all the symptoms and bronzing; and the other, which looks on the disease of nervous origin, and that involvement of the semilunar ganglia is necessary in order to produce the bronzing. He was interested to find that in the only case in which Dr. Parsons mentioned the semilunar ganglia—the second case—there was bronzing of the skin, and the ganglia were thickened. It was a very interesting point whether one should form a diagnosis of Addison's disease from persistent vomiting with emaciation, and with rapid and weak heart.

DR. R. TRAVERS SMITH said that about ten days ago he saw an out-patient at the Whitworth Hospital. Her face was bronzed in appearance, and she complained of weakness. On further examination he diagnosticated Addison's disease. The bronzing was well marked nearly all over the body and in the buccal mucous membranes, but particularly well marked around the waist. The girl's mother subsequently told him that the girl had been always addicted to tight lacing. Perhaps external agencies had some influence in the determination of the locality of the pigment.

The SECRETARY expressed surprise at the diagnosis in the first case. He used to think that bronzing of the skin was quite an essential symptom of Addison's disease. In the first case there was great weakness of the heart before death. Was the heart examined at the autopsy? Was any condition, such as fatty degeneration or wasting of the muscle, or any other condition found which would account for the feeble action? Were the lungs examined? Was there found any condition over and above the fibro-caseous condition of suprarenals which would account for the extreme cardiac weakness? Was the urine carefully examined for pigment in each case? Was there any microscopic investigation of the condition of the ganglion cells either in medullary portion of the adrenal or the adjoining cells in the semilunar ganglion? In the only autopsy he had made in Addison's disease—a case of his senior colleague, Sir C. Nixon—it was difficult to find any adrenals at all. Subsequently they were found reduced to thin yellowish masses, no thicker than paper, forming hardly perceptible thickenings on the capsule covering the upper and inner aspects of each kidney. Microscopic examination showed this to consist of somewhat pigmented fibrous tissue, containing a number of very atrophic-looking ganglion cells. There were several parallel lines of these, probably about 40 or 50 cells in all; they had lost their processes and had become extensively pigmented and rounded in outline, and it was only from their large size and the peculiar appearance of their nucleus, and the fact that some of them had kept some stumps of their processes, that it was possible to make the diagnosis that they were ganglionic in origin.

Dr. Parsons, in reply, said that he understood that the term Addison's disease was applied to a certain group of clinical symptoms. It was quite possible, apparently, for one of those symptoms to be absent without involving the diagnosis. He himself was under the impression that bronzing of the skin was an essential in the disease, and it never dawned on him that he was dealing with Addison's disease; but, on looking up the question later on, he found that several authorities gave cases in which bronzing was absent. Every complete article on the subject mentions the fact that cases of Addison's disease do occur without bronzing of the skin. One authority gave the average duration of the non-bronzed cases as 4·8 months, and the average duration of the bronzed cases as 23·6 months. It was also worth bearing in mind that pigmentation of the mucous membrane and skin may occur in conditions which are not Addison's disease. In illustration of this he gave a case where a woman was admitted to Sir Patrick Dun's Hospital with most marked pigmentation of the mouth, looking exactly like a dog's mouth. Subsequent *post mortem* examination showed the suprarenals intact; yet there was extensive disease of the bodies of the vertebræ, and the final cause of death was the bursting of an abscess into the spinal canal. With regard to the dissecting out of the semilunar ganglia, that was done in the second case, but an incision in the abdomen was not permitted in the other cases, and in these the specimens were removed with great difficulty. At any rate, when the whole of the suprarenal capsule is involved in a mass of malignant disease, even if one could open the whole abdominal cavity, it would be very difficult to dissect out the semilunar ganglia. He had learnt from the cases whenever there is obscure vomiting and very marked prostration and cardiac weakness, and where nothing can be discovered to account for the symptoms, to suspect, at any rate, Addison's disease. He had had a kind of suspicion in his mind that the third case might be one of Addison's disease, but put this aside on finding nodules in the skin. In answer to Dr. Smith, the boy was a labourer by occupation, but was not engaged in anything which would account for the pigmentation of his hands or knees. With regard to the pigmentation of the urine, the naked eye appearance showed nothing remarkable. No deep investigation was made, but indican was absent. Of course, he did not know at the time that the first and third cases were cases of Addison's disease. No microscopic examination of semilunar ganglia was made.

On the Growth of Typhoid Bacilli in Broth, containing the Serum of Typhoid Patients.

Dr. **E. J. McWeeney** read a paper on this subject.

This communication will be published *in extenso* later on.

Observations on a Series of Pathological Humeri from a private Museum.

Dr. **Knott** described a series of pathological humeri.

Dr. **E. H. Bennett** said that the series bore out the point that an exact nomenclature was wanted in dealing with such matters. Anatomists had devoted great attention to describing an anatomical and a surgical work on the humerus, causing great confusion in the description.

The Section then adjourned.

ANOMALOUS POSITIONS OF THE COLON.

Dr. **John B. Shober**, College of Physicians, Philadelphia, read a paper entitled "Anomalous Positions of the Colon," with a report of a case. The patient was a man who had suffered for 16 years from vague abdominal pains, become much emaciated and neurasthenic, and in whom examination revealed a mass in the right iliac fossa. The case was thought to be one of chronic appendicitis, but the conditions seemed very unusual. At the operation the appendix was found entirely subperitoneal and could not be located, the colon was displaced over the brim of the pelvis, and the sigmoid was abnormally situated on the right side of the abdominal cavity.

A FUNIS ONLY SIX AND ONE-HALF INCHES LONG.

J. M. **Keim** (*Pediatrics*, February, 1898) relates the case of a woman in her third pregnancy and attended by a midwife, whom he was called in to see, after she had been in labour for 18 hours, and was suffering terrific pain in the abdomen with every expulsive contraction. Plenty of room was found in the parturient strait, and forceps was applied. After moderate traction something popped like a gun and the head was easily delivered. Profuse bleeding was arrested by applying forceps to the short stump of the cord. On delivering the placenta the cord was found to be but 6½ inches long. The partially inverted uterus was reduced by means of a heavy probe wrapped with absorbent cotton. The child survived and did well.—*Ph. Med. Journal*, No. 15.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, September 10, 1898.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Average Rate for 4 weeks	Towns	Weeks ending				Average Rate for 4 weeks
	Aug. 20	Aug. 27	Sept. 3	Sept. 10			Aug. 20	Aug. 27	Sept. 3	Sept. 10	
23 Town Districts	20·7	23·0	26·7	27·3	24·4	Limerick -	21·1	22·5	28·1	25·3	24·3
Armagh -	28·5	28·5	21·4	21·4	24·9	Lisburn -	8·5	4·3	8·5	17·0	9·6
Ballymena	11·3	16·9	11·3	11·3	12·7	Londonderry	14·1	12·6	15·7	12·6	13·8
Belfast -	22·3	25·7	31·0	27·9	26·7	Lurgan -	18·2	4·6	27·4	13·7	16·0
Carrickfergus	17·5	40·9	17·5	17·5	23·4	Newry -	24·1	32·2	24·1	4·0	21·1
Clonmel -	24·3	19·5	19·5	19·5	20·7	Newtownards	17·0	62·4	17·0	17·0	28·3
Cork -	21·5	26·3	26·3	30·5	26·1	Portadown -	12·4	24·7	24·7	12·4	18·6
Drogheda -	19·0	11·4	3·8	22·8	14·3	Queenstown	0·0	11·5	28·7	17·2	14·4
Dublin -	21·0	22·2	27·0	30·3	25·1	Sligo -	35·5	35·5	30·5	45·7	36·8
Dundalk -	16·8	25·1	29·3	20·9	23·0	Tralee -	28·0	0·0	16·8	33·6	19·6
Galway -	7·6	7·6	30·2	15·1	15·1	Waterford -	23·9	23·9	35·8	27·9	27·9
Kilkenny -	23·6	33·0	18·9	37·8	28·3	Wexford -	13·5	4·5	4·5	49·7	18·1

In the week ending Saturday, August 20, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 23·4), was equal to an average annual death-rate of 22·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·1 per 1,000. In Glasgow the rate was 18·7. In Edinburgh it was 13·7.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 20·7 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 4·0 per 1,000, the rates varying from 0·0 in eleven of the districts to 10·2 in Sligo—the 7 deaths from all causes registered in that district comprising one from measles and one from typhus. Among the 130 deaths from all causes registered in Belfast are one from whooping-cough, 14 from enteric fever, and 17 from diarrhœa. The 31 deaths in Cork comprise one from whooping-cough and 4 from diarrhœa. Among the 15 deaths in Limerick are 2 from measles, and one from enteric fever. The 12 deaths in Waterford comprise one from whooping-cough and 2 from diarrhœa. The Registrar for Tralee No. 2 District remarks—"Six cases of scarlatina occurred in one family in the Rural District during the week, and 2 cases of typhus fever in the Urban District."

In the Dublin Registration District the registered births amounted to 151—77 boys and 74 girls; and the registered deaths to 146—74 males and 72 females.

The deaths, which are 2 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·8 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 21·0 per 1,000. During the thirty-three weeks of 1898 ending with Saturday, August 20, the death-rate averaged 26·8, and was 0·9 under the mean rate in the corresponding period of the ten years 1888–1897.

The deaths from zymotic diseases, which had been 29 and 37 in the two preceding weeks, amounted to 33, or 7 over the average for the corresponding week of the last ten years. The 33 deaths comprise one from measles, one from scarlet fever (scarlatina), one from whooping-cough, 8 from enteric fever, one from simple cholera, and 22 from diarrhœa. Twenty of the 22 deaths from diarrhœa were of children under 5 years of age, 16 being infants under one year old.

Eighteen cases of scarlatina were admitted to hospital against 16 admissions in the preceding week, and 11 in the week ended August 6. Eleven scarlatina patients were discharged, one died, and 69 remained under treatment on Saturday, being 6 over the number in hospital at the close of the preceding week. This number is exclusive of

18 patients at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The number of cases of enteric fever admitted to hospital, which had fallen from 46 in the week ended August 6 to 28 in the following week, further declined to 18; 17 patients were discharged, 2 died, and 104 remained under treatment on Saturday, being one under the number in hospital at the close of the preceding week.

The hospital admissions included also 5 cases of diphtheria and one of measles; 8 cases of the former disease and 7 of the latter remained under treatment on Saturday.

The number of deaths from diseases of the respiratory system registered was 15, being one over the average for the corresponding week of the last ten years, but 8 under the number for the previous week. They consist of 12 from bronchitis and 3 from pneumonia.

In the week ending Saturday, August 27, the mortality in thirty-three large English towns, including London (in which the rate was 21·5), was equal to an average annual death-rate of 23·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·4 per 1,000. In Glasgow the rate was 17·7, and in Edinburgh it was 17·1.

The average annual death-rate in the twenty-three principal town districts of Ireland was 23·0 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 5·2 per 1,000, the rates varying from 0·0 in nine of the districts to 12·4 in Portadown—the 4 deaths from all causes registered in that district comprising one from scarlatina and one from diarrhœa. Among the 150 deaths from all causes registered in Belfast are 2 from whooping-cough, one from simple continued fever, 21 from enteric fever, and 27 from diarrhœa. The 38 deaths in Cork comprise 5 from diarrhœa. Among the 16 deaths in Limerick are one from measles and one from whooping-cough. Diarrhœa caused 2 of the 8 deaths in Londonderry, and 3 of the 12 deaths in Waterford were from the same disease.

In the Dublin Registration District the registered births amounted to 190—98 boys and 92 girls; and the registered deaths to 150—70 males and 80 females.

The deaths, which are 5 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·4 in every 1,000 of the population. Omitting the death of one person admitted to hospital from without the district, the rate was 22·2 per 1,000. During the thirty-four weeks ending with Saturday, August 27, the death-rate averaged 26·7, and was 0·8 under the mean rate in the corresponding period of the ten years 1888–1897.

Thirty-six deaths from zymotic diseases were registered, being 10 in excess of the average for the corresponding week of the last ten years, and 8 over the number for the previous week. The 36 deaths comprise one from influenza, 2 from diphtheria, 3 from enteric fever, 2 from simple cholera and choleraic diarrhœa, and 24 from diarrhœa. Twenty-one of the 24 deaths from diarrhœa were of children under 5 years of age, 16 being infants under one year old.

The number of cases of scarlatina admitted to hospital was 13, being 5 under the admissions in the preceding week, and 3 under the number admitted in the week ended August 13; 10 scarlatina patients were discharged, and 72 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week. There were, besides, 22 convalescents at Beneavin, Glasnevin.

Twenty-five cases of enteric fever were admitted to hospital, against 18 in the preceding week; 21 patients were discharged, 2 died, and 106 remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week.

The hospital admissions included also 4 cases of diphtheria; 10 cases of the disease remained under treatment on Saturday.

The number of deaths from diseases of the respiratory system registered was 14, being 3 below the average for the corresponding week of the last ten years, and one under the number for the previous week. They consist of 9 from bronchitis, 4 from pneumonia, and one from pleurisy.

In the week ending Saturday, September 3, the mortality in thirty-three large English towns, including London (in which the rate was 22·0), was equal to an average annual death-rate of 24·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·8 per 1,000. In Glasgow the rate was 19·4, and in Edinburgh it was 18·1.

The average annual death-rate in the twenty-three principal town districts of Ireland was 26·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 6·5 per 1,000, the rates varying from 0·0 in eight of the districts to 16·8 in Dundalk—the 7 deaths from all causes registered in that district comprising

4 from diarrhœa. Among the 181 deaths from all causes registered in Belfast are one from scarlatina, 2 from whooping-cough, one from diphtheria, one from simple continued fever, 25 from enteric fever, and 19 from diarrhœa. The 38 deaths in Cork comprise one from whooping-cough and 5 from diarrhœa. Of the 20 deaths in Limerick 6 were from measles and 5 from whooping-cough. The 18 deaths in Waterford comprise one from enteric fever and 2 from diarrhœa. Diarrhœa caused 4 of the 6 deaths in Newry. Two of the 6 deaths in Sligo were from measles. The 8 deaths in Newtownards comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 244—118 boys and 126 girls; and the registered deaths to 185—88 males and 97 females.

The deaths, which are 29 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·6 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 27·0 per 1,000. During the thirty-five weeks ending with Saturday, September 3, the death-rate averaged 26·7, and was 0·7 under the mean rate in the corresponding period of the ten years 1888–1897.

Forty-four deaths from zymotic diseases were registered, being 14 in excess of the average for the corresponding week of the last ten years, and 8 over the number for the preceding week. The 44 deaths comprise one from measles, 4 from whooping-cough, one from enteric fever, 2 from choleraic diarrhœa, 32 from diarrhœa, and one from dysentery. Twenty-nine of the 32 deaths from diarrhœa were of children under 5 years of age, 22 being infants under one year old.

The number of cases of scarlatina admitted to hospital was 10, being 3 under the admissions in the preceding week. Sixteen scarlatina patients were discharged, and 66 remained under treatment on Saturday, being 6 under the number in hospital at the close of the preceding week. There were also 22 convalescents at Beneavin, Glasnevin.

Fifty-three cases of enteric fever were admitted to hospital, against 25 in the preceding week and 18 in the week ended August 20. Twenty-three patients were discharged, one died, and 135 remained under treatment on Saturday, being 29 over the number in hospital on that day week.

The hospital admissions included also 3 cases of diphtheria; 12 cases of the disease remained under treatment on Saturday.

Eighteen deaths from diseases of the respiratory system were registered, being 3 above the average for the corresponding week of the last ten years, and 4 over the number for the preceding week. They consist of 13 from bronchitis and 5 from pneumonia.

In the week ending Saturday, September 10, the mortality in thirty-three large English towns, including London (in which the rate was 23·2), was equal to an average annual death-rate of 24·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·0 per 1,000. In Glasgow and also in Edinburgh the rate was 23·0 per 1,000.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 27·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 7·8 per 1,000, the rates varying from 0·0 in ten of the districts to 14·6 in Clonmel—the 4 deaths from all causes registered in that district comprising 3 from diarrhœa. Among the 163 deaths from all causes registered in Belfast are one from diphtheria, 4 from simple continued fever, 31 from enteric fever, and 27 from diarrhœa. The 44 deaths in Cork comprise 8 from whooping-cough and 9 from diarrhœa. Among the 18 deaths in Limerick are 2 from measles, one from whooping-cough, and one from diarrhœa. Diarrhœa caused 3 of the 14 deaths in Waterford. The 4 deaths in Lisburn comprise one from enteric fever and 2 from diarrhœa. Among the 11 deaths in Wexford are one from whooping-cough and 2 from diarrhœa. The Registrar for the Wexford district remarks—"Whooping-cough and diarrhœa prevalent."

In the Dublin Registration District the registered births amounted to 178—107 boys and 71 girls; and the registered deaths to 206—102 males and 104 females.

The deaths, which are 54 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 30·7 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 30·3 per 1,000. During the first thirty-six weeks of 1898 the death-rate averaged 26·8, and was 0·5 under the mean rate in the corresponding period of the ten years 1888-1897.

Fifty-nine deaths from zymotic diseases were registered, being 33 in excess of the average for the corresponding week of the last ten years, and 15 over the number for the previous week. The 59 deaths comprise one from measles, 2 from scarlet fever (scarlatina), one from influenza, 6 from whooping-cough, 2 from diphtheria, 5 from enteric fever, one from cholera infantum, and 38 from diarrhœa. Thirty-one of the 38 deaths from diarrhœa were of children under 5 years of age, 26 being infants under one year old.

The weekly number of cases of scarlatina admitted to hospital, which had fallen to 10 in the previous week, rose to 20. Nine scarlatina patients were discharged, 2 died, and 75 remained under treatment on Saturday, being 9 over the number in hospital at the close of the preceding week. There were also 23 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 43, being 10 under the number for the preceding week, but 18 over the number for the week ended August 27. Eighteen patients were discharged, 3 died, and 157 remained under treatment on Saturday, being 22 over the number in hospital on that day week.

The hospital admissions included also 5 cases of diphtheria; 9 cases of the disease remained under treatment on Saturday.

Twenty-seven deaths from diseases of the respiratory system were registered, being 10 in excess of the average for the corresponding week of the last ten years, and 9 over the number for the preceding week. The 27 deaths comprise 15 from bronchitis and 9 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of September,* 1898.

Mean Height of Barometer,	30·036 inches.
Maximal Height of Barometer (on 3rd, 9 p.m.),	30·406 „
Minimal Height of Barometer (on 29th, 5 30 p.m.),	29·416 „
Mean Dry-bulb Temperature,	58·7°.
Mean Wet-bulb Temperature,	56·1°.
Mean Dew-point Temperature,	53·8°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·420 inch.
Mean Humidity,	84·3 per cent.
Highest Temperature in Shade (on 6th),	77·8°.
Lowest Temperature in Shade (on 25th),	43·0°.
Lowest Temperature on Grass (Radiation) (on 29th),	37·9°.
Mean Amount of Cloud,	46·4 per cent.
Rainfall (on 13 days),	1·452 inches.
Greatest Daily Rainfall (on 8th),	·523 inch.
General Directions of Wind,	W., S.E., S.W.

Remarks.

September, 1898, was a warm, dry, summerlike month. It recalled memories of the wonderful September of 1865, when the mean temperature in Dublin reached 61·4° and the rainfall was only ·056 inch on 3 days. In the S.E. of England torrid heat prevailed in the early part of the month, and the London district in particular was parched with drought, as well as burned with heat. In Ireland generally the rainfall was up to the average, as on several occasions torrential rains fell in connection with V-shaped depressions passing northwards or north-eastwards across this island.

In Dublin the arithmetical mean temperature (60·2°) was much above the average (55·8°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 58·7°. In the thirty-three years ending with 1897, September was coldest in 1886 and in 1882 (M. T.= 53·0°), and warmest in 1865 (M. T.=61·4°) and in 1890 (M. T.= 59·6°).

The mean height of the barometer was 30·036 inches, or 0·126 inch above the corrected average value for September—namely, 29·910 inches. The mercury rose to 30·406 inches at 9 p.m. of the 3rd, and fell to 29·416 inches at 5 30 p.m. of the 29th. The observed range of atmospheric pressure was, therefore, ·990 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 58·7°, or 1·5° below the value for August, 1898. Using the formula, *Mean Temp.*=*Min.* + (*max.* — *min.* × ·476), the mean temperature was 59·8°, or 4·3° above the average mean temperature for September, calculated in the same way, in the twenty-five years, 1865–89, inclusive (55·5°). The arithmetical mean of the maximal and minimal readings was 60·2°, compared with a twenty-five years' average of 55·8°. On the 6th the thermometer in the screen rose to 77·8°—wind, S.W.; on the 25th the temperature fell to 43·0°—wind, W. The minimum on the grass was 37·9° on the 29th.

The rainfall was 1·452 inches, distributed over 13 days. The average rainfall for September in the twenty-five years, 1865–89, inclusive, was 2·176 inches, and the average number of rainy days was 14·7. In 1871 the rainfall was very large—4·048 inches on, however, only 13 days. In 1896 no less than 5·073 inches fell on 23 days, establishing a record rainfall for September. On the other hand, in 1865, only ·056 inch was measured on but 3 days.

High winds were noted on 9 days, and attained the force of a gale on three occasions in Dublin—the 18th, 29th, and 30th. The atmosphere was foggy on the 4th, 15th, and 25th. Solar halos were seen on the 7th and 8th; lunar halos on the 28th and 30th; lightning on the 16th. There was a magnificent aurora borealis on the evening of the 9th.

With the coming of September the weather became extremely fine, warm, and in all respects summerlike. An anticyclone formed on Thursday, the 1st, in the wake of a depression which had passed quickly eastwards across the British Isles during the closing days of August. On the morning of Friday, the 2nd, a new depression in the far North temporarily broke up the high-pressure system, which, however, formed again on Saturday—a brilliant and hot day. At 9 p.m. the barometer rose to 30·406 inches (wind, S.E.). On Friday the screened thermometers rose to 74·4°, having fallen to 48·5° on Thursday, on the morning of which day Snowdon was clearly seen from the Wicklow coast.

A remarkable wave of heat passed over France and the British Islands during the week ending Saturday, the 10th. It culminated on Thursday, when the thermometer rose in the shade to 88° at Brussels, 89° in Paris, 90° at Oxford and Loughborough, 91° in London and at Lyons, 92° at Cambridge, and 99° at Rochefort. At this time a heavy rainstorm passed over Ireland, ·51 inch of rain falling at Donaghadee, ·52 inch in Dublin, ·93 inch at both Parsonstown and Valentia, and ·98 inch at Roche's Point. Until Wednesday an anticyclone stretched westward across Great Britain to Ireland, and light or moderate easterly to southerly winds prevailed. As the amount of cloud was small the sun's rays held uninterrupted sway, with the result that temperature rose daily higher and higher. Even in Dublin a maximum of 77·8°—the highest reading of the season—was recorded on Tuesday. On Wednesday the weather was less fair in Ireland owing to the approach of a large but shallow depression to the west coast. A good deal of rain fell over the western half of this country, but only a small quantity in the east. On Thursday night a V-shaped depression passed north-eastward across Ireland. It brought thunder and lightning to some stations and a general downpour of rain. In the rear of this low pressure system a brisk fall of temperature occurred and the sky cleared with a N. or N.W. wind. On Friday evening an exceptionally brilliant display of aurora borealis occurred. Saturday was dull to fair and warm. In Dublin the mean height of the barometer was 30·044 inches, pressure ranging from 30·373 inches at 9 a.m. of Sunday (wind, S.E.) to 29·883 inches at 9 p.m. of Thursday (wind, S.S.W.). The corrected mean temperature was 64·4°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 62·8°. On Tuesday the screened thermometers rose to 77·8°, on

Saturday they fell to 53·7°. Rain fell on four days to the amount of ·607 inch, ·523 inch being measured on Thursday. The wind was at first S.E., then N.W.

Taken as a whole the weather of the week ended Saturday, the 17th, may be looked on as fine and warm. At the beginning and close a cyclonic distribution of atmospheric pressure prevailed, but from Wednesday to Friday the barometer was high, the isobar of 30·4 inches being found over Germany on Thursday and Friday. A good deal of rain (·149 inch) fell in Dublin on Sunday, when a V-shaped depression passed eastwards across Ireland, reaching Belgium on Monday morning. This disturbance gave even London some showers (·040 inch). There was another depression on Tuesday. As it passed away a large area of high pressure spread across England and Ireland from the Continent. Its S. winds were accompanied by another heat wave in which the thermometer rose slightly above 80° in the S.E. of England on Thursday. Next day the barometer gave way in Ireland, and lightning was seen at night. Saturday was changeable and showery with thunder in places. In Dublin the mean height of the barometer was 30·027 inches, pressure ranging between 30·313 inches at 9 a.m. of Thursday (wind, calm) and 29·680 inches at 6 p.m. of Saturday (wind, S.S.W.). The corrected mean temperature was 62·3°. The mean dry bulb reading was 61·6°. On Wednesday the screened thermometers rose to 72·6°, on Monday they fell to 48.0°. The rainfall was ·274 inch, on three days, ·149 inch being measured on Sunday, and ·112 inch on Saturday. Westerly winds predominated. Ligntning was seen on Friday evening. The rainfall at Greystones, county Wicklow, was ·146 inch on four days.

A decided fall in temperature was the most striking feature in the weather of the week ended Saturday the 24th. On Sunday a large V-shaped atmospheric depression passed eastwards across the British Islands. At 8 a.m. southerly winds and high temperatures were found over England, while a northerly gale was blowing in Ireland, where temperature was from 10° to 18° lower than on the previous morning. Even in the S.E. and S. of England a brisk fall of temperature occurred—so brisk that, whereas on Saturday, September 17, the shade thermometer had risen to 86° at Oxford, 87° at Loughborough, 88° in London, and 89° at Cambridge, on Sunday night the minima were—44° at Loughborough, 42° at Oxford, and 41° in London and at Cambridge. A recovery of temperature subsequently took place, but it proved transitory, for after an anticyclone had formed over the British Isles on Thursday, the shade thermometer fell at night to 39° at Cambridge and York, 38° at Parsonstown and Leith, 36° at Loughborough and Stornoway, and 34° at Nairn. Friday night gave readings of 32° at Loughborough and 31° at Nairn. On Wednesday quite a considerable rainfall took place in Dublin, amounting to ·099 inch. It was due to a shift of wind from W. to N.E. in connection with a large but shallow depression over the Peninsula and the Bay of Biscay. The last three days were cloudy and hazy to fair and bright. The nights were cool and heavy dews fell in the open fields. In Dublin the mean height of the barometer was 30·070 inches, pressure ranging from 29·831 inches at 9 a.m. of Sunday (wind, N.W.) to 30·232 inches at 9 a.m. of Friday (wind, E.S.E.). The corrected mean temperature was 57·8°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 55·9°. The screened thermometers rose to 70·9° on Tuesday and fell to 48·2° on Saturday. On Thursday the maximum was only 57·8°. The rainfall was ·160 inch on two days, ·099 inch being registered on Wednesday. At first westerly, afterwards easterly winds prevailed.

The closing days of September (25th–30th) witnessed the substitution of cyclonic for anticyclonic conditions over the British Isles, and a complete break in the weather, which became stormy, cold, and rainy—first in Ireland and afterwards in Great Britain also. On the first two days the centre of a dispersing anticyclone was found over the N.E. of England. The weather was quiet and fine, with a large diurnal range of temperature at inland stations. Thus, at Loughborough, Leicestershire, the shade thermometer rose to 59° on Sunday and fell to 29° during the ensuing night—a range of 30° F. in very few hours. On Tuesday morning a V-shaped depression advanced across Ireland, where rain fell heavily and the wind shifted from S.E. to N.W. as the trough of low atmosphere pressure passed by. In the rear of this disturbance Wednesday proved fine and bracing, but a lunar halo at night heralded the approach of a new and even deeper depression from the westward. This system caused extremely heavy rains in many places and gales of winds from N.W. or N. when the centre had passed by. Even in England there was an abundant rainfall on Friday. A lunar halo was again seen on Friday night. In Dublin the barometer ranged between 29·416 inches at 5 30 p.m. of Thursday (wind, W.) and 30·166 inches at 9 p.m. of Friday (wind also W.). The shade thermometers fell to 43·0° on Sunday and rose to 63·0° on Monday. The rainfall was ·411 inch on four days, ·210 inch being measured on Tuesday. S.E. and N.W. winds alternated with each other.

The rainfall in Dublin during the nine months ending September 30th amounted to 17·968 inches on 137 days, compared with

10·968 inches on 112 days during the same period in 1887, 21·971 inches on 165 days in 1897, and a twenty-five years' average of 19·734 inches on 142·8 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 1·858 inches distributed over 12 days. Of this quantity ·580 inch fell on the 8th. At that station the rainfall since January 1st, 1898, has been 19·688 inches on 124 days, compared with 17·091 inches on 118 days in the same nine months of 1893, 25·896 inches on 137 days in 1894, 23·665 inches on 117 days in 1895, and 21·912 inches on 115 days in 1896, and 29·570 inches on 158 days in 1897.

At Cloneevin, Killiney, Co. Dublin, the rainfall in August was 2·79 inches on 20 days (the maximal fall in 24 hours being ·90 inch on the 25th), compared with a twelve years' average of 2·887 inches on 16·5 days. In September 1·46 inches fell at Cloneevin on 12 days. The maximal fall in 24 hours was ·40 inch on the 27th. On an average of twelve years the September rainfall at this station has been 1·778 inches on 12·1 days. Since January 1st, 1898, 18·19 inches of rain have fallen at Cloneevin on 136 days. The rainfall in the first nine months of the year at Cloneevin was 22·92 inches on 150 days in 1894, 21·58 inches on 129 days in 1895, 20·50 inches on 129 days in 1896, and 22·91 inches on 158 days in 1897.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell in measurable quantity on 12 days during September to the total amount of 1·991 inches, compared with 8·166 inches on 11 days in the same month of 1897. The maximal fall in 24 hours was ·538 inch on the 27th. Since January 1, 1898, the rainfall at this Second Order Station has been 22·091 inches on 122 days. The highest temperature in the screen was 72·5° on the 2nd and 14th, the lowest was 41·7° on the 29th.

THE CUVIER PRIZE, PARIS.

The Cuvier Prize of the Academy of Sciences, Paris, value 1,500 francs, has been awarded to Prof. Marsh, of Yale University. The prize is awarded every three years for the most noteworthy work published during that period on the Animal Kingdom or on Geology.—*Medical and Surgical Reporter*, No. 2,131.

PERISCOPE.

CONGENITAL DEFORMITIES.

DR. BARNES (*Jour. Am. Med. Ass.*) writes of congenital deformities:—Consanguineous marriages and incestuous connections must be admitted as important causes of congenital deformity. In a single case of the intermarriage of first cousins, to my knowledge there resulted ten births—of these, three sons were idiotic and otherwise defective, and one was insane; of the daughters, all married and all were sterile. In another family, the marriage of first cousins, there resulted six births—of these, four were idiotic and deformed.

ECTOPIC GESTATION TWICE IN THE SAME PATIENT.

C. B. SCHOOLFIELD (*Virginia Medical Semi-Monthly*, February 11, 1898) reports the occurrence of ectopic gestation twice in the same patient. In the second pregnancy, cessation of menstruation and other signs of pregnancy were noticed in December, 1893; on January 1st there was a slight irregular flow, with colicky pains, lasting a week. On February 25th there were severe pains, with syncope, followed by slight hæmorrhage; on March 8th some "flow" occurred after a short carriage ride. The woman was kept in bed until April 29th. A tumour about the size of a small orange was detected through the abdominal wall, which was believed to be a tubal pregnancy, ruptured into the broad ligament. The symptoms were similar to those present in the former tubal pregnancy. The patient made a good recovery and was enjoying good health at the time of report. There have been collected 10 cases in which ectopic pregnancy has occurred more than once in the same patient, and in which the diagnosis was confirmed by autopsy or cœliotomy, and 9 cases without such confirmation.

COINCIDENT UTERINE AND TUBAL PREGNANCY.

H. E. JONES (*Virginia Medical Semi-Monthly*, February 11, 1898) reports a case of coincident uterine and tubal pregnancy. The patient was a multipara, forty-two years old, who was subjected, unsuccessfully, for a month to various forms of treatment to avert threatened abortion; after which it was thought best to empty the uterus. This was accordingly done, when it became evident that the fœtus had been discharged, as nothing was found but a well-formed placenta of 2½ or 3 months' development. The patient made a good recovery and steadily improved for about 18 days. On thorough examination of the pelvis at this time, a tumour of indefinite nature was found in the region of the left tube and ovary. The patient was in poor condition to undergo a major operation, but delay seemed out of the question; she was, therefore, removed to a sanitarium and prepared for operation. After the lapse of a month there was evidence of internal hæmorrhage. The abdomen was opened, and on incising the peritoneum there was a flow of bright-red blood. Clotted blood was turned out and hæmorrhage controlled by pressure. The tumour proved to be a tubal gestation sac situated midway between the ovary and the uterus. The sac contained a fœtus, which was judged to be the result of about 4 months' gestation. The patient reacted from the chloroform, but the signs of shock grew more profound as the effect of the anæsthetic wore off, and in spite of free stimulation, hot applications and transfusion of normal saline solution, she died 4 hours after the operation. Death was believed to be due to hæmorrhage from the sac an hour or more prior to the operation, and which, in the weakened and anæmic condition of the patient, she was unable to withstand.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Tabloids of Zinc Oxide.

The therapeutic uses of zinc oxide are many, and there is little doubt that the imperfect solubility of pills of this drug has discouraged its use for internal administration. The rapid disintegration of "tabloid" zinc oxide (prepared by Messrs. Burroughs, Wellcome and Co.) when dropped into water should remove this objection, and enable so useful a therapeutic agent to be more generally prescribed. The drug has been administered with good results in the treatment of the summer diarrhœa of infants and adults, and in gastralgia, and it has proved serviceable in epilepsy resulting from peripheral irritation. The nervous tremors and unsteadiness of chronic alcoholism are sometimes relieved by zinc oxide, and it has also been used successfully for whooping-cough and chorea. "Tabloid" zinc oxide gr. 2 is issued in bottles containing one hundred.

RECLAMATION BY DR. J. CLARENCE WEBSTER.

M'GILL UNIVERSITY,
September 28, 1898.

TO THE EDITOR OF "THE DUBLIN JOURNAL OF MEDICAL SCIENCE."

DEAR SIR,—May I be allowed to make a short reference to the review of my Text-book of Diseases of Women which appeared in the September number of your journal.

The Reviewer makes the following statements:—

"When writing of the bimanual examination, the author appears to think that a distinction should be drawn between the position in which a woman is placed in private as compared to hospital practice, and for the former he advises the side position. For our part, we are convinced that the dorsal position affords infinitely enhanced opportunities for arriving at a correct diagnosis, and therefore fail to see why our private patients should be placed at a disadvantage as compared to those attending the public institutions."

In the former of these sentences the reviewer has quite misrepresented me. If he will turn to page 178 in my book he will read that I expressly state that the bimanual examination is *the most satisfactory method* of gaining information with regard to pelvic conditions—therein being in agreement with the reviewer.

In describing the method of conducting the bimanual examination in private practice, I give the procedure which is carried out in the Edinburgh School, being that which is there considered to be least likely to disturb the patient's feelings. I state that the vaginal examination is first made as the patient lies on her left side, covered by a light rug. The fingers being still in the vagina, the patient is asked to turn from the lateral to the dorsal position, and to draw up her knees *in order that the bimanual examination can be carried out.*

I describe this procedure to distinguish it from the more summary method in vogue in many hospitals, of placing a patient on the examining table in the lithotomy position for the purpose of carrying out the examination.

It is surely very evident that patients must prefer the Edinburgh plan; indeed, in the Scottish Capital, it was practised in hospital and dispensary as well as in private work. This custom has, no doubt, been evolved in requirement to the demands of punctilious modesty, so characteristic of Scottish women.

In my article dealing with the uterine sound (pp. 198–203), I have carefully described the methods of employing the instrument, both in the lateral and lithotomy positions, pointing out the dangers attendant upon its use. The method of replacing a retroverted movable uterus with the sound, described on p. 438, is the one generally practised in the Edinburgh School, the lateral position being considered most advantageous. I believe that this method need be but rarely employed, postural manipulations being safer and more satisfactory. I have pointed out in my book (p. 198) that the instrument has been too extensively used, and that owing to the perfected methods of examination by the hands alone, it need be used but rarely.

I am yours,

J. CLARENCE WEBSTER.

The Reviewer comments upon Dr. Webster's letter as follows:—

"I do not see that any other deduction is likely to be drawn from the pages of Dr. Webster's book than the one adopted by me in the very favourable review of it which appeared in the September number of *The Dublin Journal of Medical Science.* In practice it is not feasible to treat the vaginal and bimanual examinations as distinct, and to adopt different positions in which to place our patient when conducting these is absurd.

"Therefore, when the author states that in order to examine the vagina and vulva 'only the lateral position is necessary,' he must be prepared to find his followers either foregoing the bimanual as a routine measure, or else endeavouring to carry it out in the position so strongly advised by him as being generally suitable for private patients.

"As to his method of causing a woman to turn from her side to the back position with fingers still placed in the vagina, it is open to so many objections, that were it employed as a constant practice, it could not be too vigorously condemned.

"I am pleased to have the author's authority for stating that the sound has been too extensively used in replacing the uterus."

"VIMBOS."

THE Vimbos Company, Ltd., have secured the bronze medal (the highest award for beef extract) for purity and quality of their fluid beef at the Birmingham Congress of the Sanitary Institute of Great Britain. The Company announce that the Health Officer of Edinburgh has been invited to make periodical inspections of their works and to take samples of the materials used in the manufacture of Vimbos.

THE DUBLIN JOURNAL
OF
MEDICAL SCIENCE.

DECEMBER 1, 1898.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVII.—*The Relations between Preventive Medicine and Vital Statistics.*[a] By THOMAS W. GRIMSHAW, C.B., M.A., M.D., Univ. Dubl.; Ex-President, R.C.P.I.; Registrar-General for Ireland.

(*Continued from page 400.*)

I HAVE shown you how death-rates vary in healthy and unhealthy districts, but we have to look further for our just standards for comparison. We all know that the old must die, that this is the one and the only one certainty with every child that is born. The chances of dying are different at every period of life, indeed at every day of life if our statistics were sufficiently elaborate to consider such minute divisions. To obtain a just knowledge of our chances of life we have to construct life tables which show the probabilities of living at each period of life until its extreme limit. Dr. Farr was not the first to construct life tables (which owed their origin to Halley, the great astronomer, the first who ventured to predict the return of a comet at a specified time in the year 1759), but he was the first to construct them with that scientific accuracy which enables vital statisticians, sanitarians, and actuaries to apply standards to the work that each has in hand. Formerly these tables were founded on the statistics of death alone, with reference only to the ages at which the deaths had taken place. This method would be true if the population were stationary, but where is there a stationary population? I think we may answer, Not anywhere! The present method of constructing life tables is by a comparison of the deaths and the living at each age, which gives the rate of mortality and survivorship. This would not be the place to give details as to the mathematical procedure by which such tables are constructed. Mainly owing to the ingenuity of Dr. Farr we have such tables, and it is by these that we accurately measure the health of communities and are able to test and guide the work of sanitarians.

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[a] Being an Address delivered before the Section of Preventive Medicine and Vital Statistics, at the Congress of the Royal Institute of Public Health, held in Dublin, August 18th to 23rd, 1898.

I have shown you by crude statistics the diminution of the death-rate in the United Kingdom, the difference between healthy and unhealthy districts, the contrast between town and country. I have shown you that the chances of untimely death have generally diminished. Now let us see in what proportion the chances of living have improved.

Dr. Tatham furnishes this information in his observations concerning a "New English Life Table" and "An English Healthy District Life Table" for the years 1881-1890 contained in the supplement to the "Fifty-fifth Annual Report of the Registrar-General for England."

It appears on close examination of the mortality statistics of England and Wales by the light of life tables that, as the age composition of the population has somewhat altered since the former decennial summaries were made, the decrease of mortality per 1,000 is not quite so large, though large enough to illustrate all the points I have been trying to impress upon you, as it would appear as if the age composition had remained the same.

What are the chances of life at birth now compared with former times? and what are its chances in general compared with those in a town district, say Manchester, for which we have special tables, owing to the energy of Dr. Tatham when Medical Officer of that city, and to the enlightened liberality of the Manchester Corporation?

The expectation of life of a male child born in England based on the mortality in the years 1838-1854 was 39·91 years; that founded on the mortality statistics of 1871-1880 was 41·35 years; and that based on the deaths for the decennium ending with 1890 was 43·66 years.

For females the chances were somewhat better, viz., 41·85, 44·62, and 47·18 respectively in the several periods.

According to the latest information then, children in England of the male sex would at birth on an average have an expectation of life of 43·66 years. If they had the misfortune (in this sense) to be citizens of Manchester, their mean after-lifetime could only be 28·78 years, but if they were so fortunate as to be residents of the healthy districts, their expectation of life would be 51·48 years.

The corresponding numbers for female children would be in general 47·18, for Manchester 32·67, and for the healthy districts 54·04 years.

These figures show that the chances of life have much improved, and that they are still more added to by living in the country instead of in a great town such as Manchester.

We see that the standard, the expectation of life, has been raised, and this rise is undoubtedly mainly owing to the sanitary measures of the last thirty years. For the present the standards we should look to are those which have already been attained in the "healthy districts," a death-rate not exceeding 15 per 1,000, instead of nearly double that in some of our large towns, and an expectation of life at birth of not less than 51½ years for males and 54 for females, instead of 28¾ years and 32⅔ years as found in the city of Manchester, and probably lower elsewhere if the figures were available.

I have thus given you the main standards of measurement. Time does not permit me to go into the details of the expectation of life at different ages and in each of the sexes. We have applied the standards widely, and I think strikingly.

We have now to inquire generally where the heavy "death-toll" is levied? At what period of life? How is it levied? By what diseases? Among what workers of the great human hive of industry? Among what social classes of the community?

It is upon the young children Death levies his toll with the greatest severity.

Of the 5,244,771 persons who died in England and Wales during the ten years 1881-1890 there were 1,259,860 under one year of age, or, in round numbers, nearly one-fourth of all the deaths were among the babies; to be exact, the ratio was 24 per cent. Of the same total no less than 2,009,984 died under five years of age, or 38·3 per cent. The death-rate of infants under one year of age, as we have already seen, is at the rate of 142 per 1,000; in other words, of 1,000 children born in England and Wales no less than 142 die before they reach the age of one year, and the death-rate of children under five years of age is 56·82 per 1,000 of those living at these ages

The deaths of infants under one year old in Scotland are equal to 119 for every 1,000 births, and those of children under five years of age give a rate of 51·2 per 1,000 living at that age.

In Ireland the death-rate of children is not so high as in either England or Scotland, the rates being 95 per 1,000 living under one year and 36 per 1,000 living under five years.

These figures show the age at which the high death-toll is levied, and where we are mainly to look for the greatest saving of life.

In England the chances of a baby at birth living to be one year old are about the same as those of a person of eighty living to be eighty-one. I shall not pursue this point further.

How is the death-toll levied? By what instrument does the hand of Death inflict his wounds? By disease and accident. But by what disease is the death-toll raised to its highest? Many would answer, "By epidemic and infectious diseases (zymotic as they are usually called) of course." But this on inquiry is found not to be so. Ten diseases belonging to the class of zymotic diseases caused in the decade 1881-1890 only 70,717 deaths out of 883,156 in the whole of Ireland. This is about 8 per cent. out of the whole. Inflammatory diseases of the respiratory organs (bronchitis, pneumonia, &c.) caused in the same period 153,279 deaths, or more than double the number from the

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Principal Zy	
Typhus.	Whooping Cough.
9	155
16	191
11	200
2	95
11	174
14	392
63	1,207
...	...
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zymotic diseases alluded to. Consumption, or tuberculosis of the lungs, alone caused 103,314 or 11·7 per cent. of all the deaths, and if the other forms of tubercular disease be added the death-toll from tuberculosis will be so far raised as to make it as a single disease the most destructive of all maladies prevailing in Ireland, and exceeding in its destructiveness all the so-called infectious diseases put together. This is also generally true throughout Europe. There are other groups of diseases as destructive as the zymotic group, besides those which attack the respiratory system, but of these it is unnecessary for me to give details. The disease, however, as a malady which is the most destructive is tuberculosis. This has now been distinctly ascertained to be of an infectious character. Many of its modes of propagation are well known, and it is the one above all others to be dealt with by sanitarians. It used to be the custom to speak of the infective fevers as *par excellence* the preventable diseases, and to these the sanitarian has mainly directed his attention. This attention should not in the least be relaxed, and the diminution in the death-rate from infectious fevers is in itself a demonstration of what sanitarians can accomplish. It is now their duty to follow up tuberculosis, and it is equally certain the result will repay the effort. Probably all other diseases also are more or less amenable to the sanitarian, and whatever promotes the general health of the community will certainly tend to diminish disease and add to the glory of Preventive Medicine.

I shall now briefly touch upon the question of the influence of occupation on the chances of living, and with regard to it I shall also rely upon the information furnished by my English colleague as set out by his able assistant, Dr. Tatham.

Here, however, we are at a disadvantage, for up to the present it has been practicable to deal only with the occupations of males. It has been found that there is a great uncertainty attaching to the statement of female occupations, and while 94 out of every 100 males of the ages of fifteen years and upwards are stated to be following some specified occupation, only 38 out of every 100 females are so returned.

People are not occupied during their whole lives, and it is only from the age of fifteen years upwards that males can be said to be occupied. Nor can occupation in the earlier years of working life be considered to have much effect on longevity, and at the later years men are gradually ceasing to be actively engaged in work. Thus while the conditions of the occupied can be dealt with from the age of fifteen years upwards the period of life during which occupation seems to have a material effect on the chances of life is between the ages of twenty-five and sixty-five years.

I cannot here attempt anything like an adequate analysis of the great masses of information published in the reports of the Registrar-General for England, as edited by Drs. Farr, Ogle, and Tatham, but the following considerations will give some idea of how occupation may affect the chances of living. Of course the influence of occupation upon health is largely governed by the places where the occupation is carried on and the conditions under which it is pursued, and the habits which usually accompany it.

If the mortality of all occupied males between the ages of 25 and 65 in England be taken as represented by 100, we find that the rate will be 120 in London, 131 in industrial districts, and but 72 in agricultural districts, being 20 per cent. and 31 per cent. above the average in the two former, and 28 per cent. under it in the last.

As most industrial occupations are pursued in great centres of population, it must be admitted that the workers in towns share the unhealthy conditions incident to all inhabitants of urban districts, and that those pursuing their occupations in rural districts, no matter what those occupations may be, share to some extent the advantages of rural life.

In order that we may take some examples to demonstrate the different chances of life in different occupations I must first explain that we must accept the ages 25 to 65 as the period of life, and having ascertained for the general population the number of persons among whom there would be (calculated by intermediate groups of age which I need not specify) 1,000 deaths, we find that in an equal number of occupied males there would be 953 deaths, or somewhat less than the average for the male population at these ages. In London, however, the occupied would die at the rate of

1,147, and in industrial districts at the rate of 1,248, while in agricultural districts their mortality would be at the rate of 687 only.

At the head of the list we find innkeepers in industrial districts with a comparative mortality figure of 2,030. At the lowest end of the list "farmers" in agricultural districts 506. Between these I may mention as above the average of occupied males (953), costermonger "hawker" 1,652, coal heaver 1,528, general labourer in industrial districts 1,509, general labourer (London) 1,413, chimney sweep 1,311, lead miner 1,310, cotton manufacture (Lancashire) 1,176, coal miner (South Wales and Monmouthshire) 1,145. As below the average for occupied males, "silk and satin manufacture" 921, shoemaker, bootmaker 920, commercial clerk 915, railway engine-driver 810, coal miner (Durham and Northumberland) 774, domestic indoor servant 757, agricultural labourer 666, schoolmaster 604, gardener 553, clergyman 533.

I shall now invite your attention to a most difficult, but to my mind a most important question, to which I have already referred. In what proportion is the death-toll levied in each social class of the community? I have given you examples of how differently it is levied on those pursuing different occupations, but these examples demonstrate that the death-toll may sometimes be much higher in a particular occupation followed by a well-to-do person, an innkeeper for instance, than in one of a humbler social sphere, an agricultural labourer for example. I have also shown you that the gardener and the clergyman have about equal chances of life.

The question of class mortality is one surrounded by great difficulties, very much greater difficulties than are connected with the subject of the influence of occupation on death-rates, but as the latter were at one time considered insurmountable and have been largely overcome, so I do not despair that the difficulties connected with the former may also be surmounted. I have made the attempt. Up to the present my attempt can scarcely be considered to be more than experimental, but the results arrived at are sufficiently striking to warrant me in bringing them under your notice in connection with the subject I have been considering.

As you are aware, Census statistics are collected by occupations, but, as I have pointed out, only a portion of the population are occupied, and effectively occupied only between the ages of twenty-five and sixty-five. Most of these workers have wives and children dependent upon them, but the Census returns as published take no note of this circumstance. Thus a carpenter married, and with a family is treated in the published Census returns as only one individual, although the property, health, and even the life of his dependents rest on his success as a carpenter; the members of his family would generally appear among the unoccupied. In this case we want to show the death-rate of the carpenter and his dependents, then of all carpenters and their dependents, in fact the death-rate of a community, which we may call the community of carpenters. So with all other ranks in life.

It occurred to me prior to the Census of 1881, and before I had the honour of being Registrar-General, that it would be very desirable to have a social classification of the people made in connection with the then approaching Census. I brought the matter under the notice of the Dublin Sanitary Association, who drew the attention of the Government to the subject, the result being that the Government agreed to permit the experiment to be tried so far as the population of the Dublin Registration District was concerned. I had little thought when I first moved in the matter that it would fall to my lot to carry out my own ideas, but such proved to be the case. In the year 1879 I was appointed Registrar-General, and shortly after a Royal Commission was appointed to inquire into the sanitary condition of Dublin, and curiously enough, in a letter on the subject of the work of the Commission written by that eminent sanitarian Sir Edwin Chadwick to his friend and equally eminent sanitarian Sir Robert Rawlinson, the Chairman of the Dublin Commission, whose loss we have so lately to deplore, he suggested the obtaining of the very class of information to which I have alluded, and Sir Robert Rawlinson agreed that it was of vast importance that such information should be available, and deplored his inability to obtain it for Dublin or elsewhere.

The result of the action of the Dublin Sanitary Association was that after the Census of 1881 a table was introduced into the weekly returns for Dublin, where the whole population was classified into social strata. This was continued after the Census of 1891, with the result as set out in the following statement, showing the social strata of the population of Dublin and the population belonging to each in 1891:—

Class.	Occupation or Social Position. (The 24,901 persons returned under the head "Unspecified" in Table 91 of the General Report on the Census have been distributed *pro rata* among the several groups to which they most probably belonged.)	Population in each class and group in 1891.
	All persons - - - - - - -	349,594
	CLASSES.	
I.	Professional and independent class - - -	15,579
II.	Middle class - - - - - - -	81,469
III.	Artisan class and petty shop-keepers - - -	99,377
IV.	General service class - - - - -	147,978
V.	Inmates of workhouses - - - - -	5,191
I.	*Professional and independent class.*	
	1. Clerical, medical, legal, and other professions, naval and military officers, and heads of public departments - - - - - - -	7,989
	2. Merchants and manufacturers, higher class -	1,857
	3. Persons of rank and property, not otherwise described	5,733
II.	*Middle class.*	
	4. General body of officials—Civil Service, banking, &c.	5,877
	5. Traders (except petty shop-keepers), business managers, &c. - - - - - - -	26,036
	6. Clerks and commercial assistants - - - -	25,001
	7. Miscellaneous—including all householders in second class localities not included in above - -	24,555
III.	*Artisan class and petty shop-keepers.*	
	8. Working engineers, engravers, printers, watchmakers, and jewellers - - - -	7,431
	9. Building and furnishing trades - - -	26,294
	10. Clothing trades - - - - - -	23,927
	11. Food supply trades - - - - - -	7,949
	12. Other trades and callings ranking with trades -	26,937
	13. Petty shop-keepers - - - - - -	6,839
IV.	*General service class.*	
	14. Army, police, postal delivery, and prison services, &c. - - - - - - - -	13,729
	15. Domestic servants - - - - - -	39,967
	16. Coach and car drivers, vanmen, &c. - -	10,810
	17. Hawkers, porters, labourers, &c. - - -	83,472
V.	*Inmates of workhouses.*	
	18. Workhouse inmates - - - - -	5,191

This system has been in use since the beginning of the year 1883, prior to which time a list of deaths by occupations had been temporarily introduced into the Dublin weekly returns. Before the Census of 1891 was taken it had been proved by experience that the population of each social class in 1881 had not been as accurately defined as it might have been had more definite information been forthcoming in 1881, so a somewhat modified classification was introduced after the Census of 1891. The results of the work before the Census of 1891 may therefore now be laid aside as those of an incomplete inquiry, though they yielded much information and proved the importance of the study of class mortality statistics, or as Mr. Noel Humphreys expressed it, in a valuable paper on "Class Mortality Statistics," read before the Royal Statistical Society on the 19th of April, 1887: "Crude as they are in their present form of publication they have much real value, and deserve the careful consideration of all interested in this important subject." I take this opportunity of thanking Mr Noel Humphreys for his kindly, intelligent, and useful criticism of my figures, of which there had been but three years' experience when he wrote his interesting paper.

I have now six complete years of a more accurate inquiry than that criticised by Mr. Humphreys, nevertheless these statistics are still crude as published, and it is only with crude results that I now propose to deal. I have here two Tables giving the crude results of the compilation of class mortality statistics of Dublin for the six years 1892-1897. During this period there died in the Dublin Registration District 56,987 persons in a population of 349,594, being a crude death-rate of 27·2 per 1,000. If we analyse the death-rate as distributed among the several classes of the community, we find that among the professional and independent class the rate was 22·2 per 1,000 living and belonging to that class. Among the middle class it was 19·5, among the artisan and petty shop-keeper class 23·2, and among the general service class and workhouse inmates 34·3. It will be observed that the rate of mortality is somewhat less in the middle than in the professional and independent class, and there is but a slight difference between this (the middle) class and the artisan class. These apparent anomalies are owing mainly to the different age composition of the classes, a subject which I cannot deal with here, but which I hope to go into minutely at some future time. It may, however, be noted that at each age period (except at extreme old age) given in the table the death-rate rises as the class falls in social position, and without going fully into the subject I may here remark it is to the fact that old persons form a much higher percentage of the total number of persons in the independent class than they do in the middle class that the excess of the general death-rate for the former is due. The difference, however, between the death-rate of these classes and that of the lowest stratum of all—the general service and workhouse class—is very striking.

We may, however, look at this subject from another point of view, and divide the whole population into an upper and a lower stratum. In this arrangement we combine the professional and independent class and the middle class under one head, and all others (artisan and petty shopkeepers, general service class and inmates of workhouses) under another head. In the former we find the crude death-rate to be 20 and in the latter 29·9 (nearly 30) per 1,000. It is therefore among the latter that we look for the causes of specially high rates when we find the general death-rate unduly high, as it unfortunately is in the Dublin District. It may be, and undoubtedly often is, the case that a district contains an undue proportion of persons living under the conditions found among the lower division of the people of Dublin. I believe, though I have no proof, that this is actually the case in Dublin, especially in the city of Dublin. There is not any standard wherewith to measure with reasonable accuracy the proportion between the upper and lower social strata in any community. The number receiving Poor Law and charitable relief otherwise than through the Poor Law is still more variable, and unfortunately often depends upon the amount of such charitable assistance which may be available. In a certain Continental town which I visited some two years ago I was informed that probably three-fourths of the population were more or less helped by charitable organisations, many of them not in the least requiring it, in fact nearly every one in the town could obtain a dole in some shape if he so desired. But to return to my subject. It is well known that the most delicate test of the health of a community as measured by death-rate is that derived from the death-rate of young children. In the upper social stratum in Dublin the death-rate of children under five years of age is at the rate of 37·8 per 1,000, while in the lower stratum it is 93·6, or 148 per cent. higher. Among the general service and workhouse class it is 111·4, while among the professional and independent class it is but 15·2. At every age, except extreme old age, as the class descends the rate of mortality increases, the greatest variation in proportion being among young children. The waste of life among the children of the poor is an appalling factor in such considerations as these. Drunkenness and other kinds of vice, as well as poverty and ignorance, contribute to swell this terrible death roll. The miseries of these neglected and maltreated little ones are beyond adequate description. I happen to be Chairman of the Dublin Branch of the National Society for the Prevention of Cruelty to Children, and having regard to the facts daily brought under the notice of that Society, the wonder is not that so many die, but that so many live.

I have claimed for Dublin that we have here taken some of the earliest steps to advance Sanitary Science and Preventive Medicine, and I have again to claim that in Dublin we have taken a step towards a system of class mortality statistics. It is for Dublin alone that tables such as those I have submitted to you can be produced. I admit their crudeness, but I claim that it is only by such tables that we can really estimate the true state of the health of a community. I consider that such tables should be compiled for every district. This work could not be undertaken by the General Register Office, but it might, and I think it should, be undertaken by local sanitary authorities, especially in great towns. I have been able to do it for Dublin because the General Register Office happens to be situated here, and I have, as it were, under my immediate view this city and its surroundings. London is too large for the Registrar-General of England to undertake such a work for the Metropolis, where his office is situated. I trust that all my hearers will think over this matter, especially those who are medical officers of health, or members of sanitary authorities.

I now bring my remarks to a close. I have endeavoured to show you the necessary connection between Vital Statistics and Preventive Medicine, and to indicate the main application of Vital Statistics as tests of the health of communities. I trust my sketchy remarks have fulfilled their object and may assist the cause of Preventive Medicine. I have to thank you for the attention you have given to so general a survey of a vast and complicated subject.

ART. XVIII.—*Note on "Relapse" in Scarlatina.* By RICHARD H. KENNAN, M.D., Dubl.; late Resident Medical Officer, City Hospital, Park Hill, Liverpool.

THE subject of relapse (so-called) in scarlet fever has excited very considerable attention during recent years. More particularly has it come under the notice of those who are engaged in large isolation hospitals.

One is struck, in looking up the literature of scarlatina, by the fact that the text-books of even recent publication contain little or no reference to its occurrence. Indeed, they are fairly unanimous in the opinion that a relapse, or second attack, of scarlatina is to be ranked amongst the very exceptional experiences in medical life, and that when it does occur it is invariably after some years have elapsed since the first attack. But second attacks taking place so soon after the first as to be actually called relapses were not seen apparently till recent years. It is not reasonable to suppose that such an occurrence, evident as it now is, could have been long overlooked by the many careful observers who had been attracted by the very interesting study of scarlatina. Nor is it probable that the character or life history of this fever is very appreciably changed. It seems as if the practice, which has grown up with the modern developments of public health administration, of isolation of dangerous infectious disease in large hospitals, is directly responsible for it. This may require a word of explanation. In private, and in all cases before isolation on a large scale as at present carried out was thought of, each patient was subjected to an ever-diminishing intensity of infection. He was himself daily becoming a lessened source of danger to others, and also to himself.

In a hospital ward, however, in which the atmosphere and contents are kept, by the constant introduction of acute cases, charged with infective material, this diminution or attenuation is not obtained. The patient whose attack has left him with but slight protective power may fall a victim to a second attack. Of course it is not to be understood that this is by any means a common occurrence, but more on this point presently.

To obviate this risk, it has been suggested to keep certain wards set apart for the reception of acute cases, others to which these cases will be transferred when becoming convalescent, and others again in which convalescents will be placed for some time prior to their discharge from hospital. I may say that this was the practice at the City Hospital, Park Hill, Liverpool. The systematic disinfection of all wards was carried out as frequently as circumstances permitted.

Now, as to the frequency of relapse, or, as I prefer to consider it, early second attacks—that is, second attacks occurring before all evidence of the first has passed away—Dr. Caiger, Superintendent of the South Western Fever Hospital, under the Metropolitan Asylums' Board, has gone with characteristic carefulness into the statistical as well as the clinical aspect. He finds that a true relapse or early second attack occurs in about ·5 per cent. of all scarlatina cases admitted to hospital.

For the benefit of those who have no intimate knowledge of the routine of a large fever hospital, I may point out that the diagnosis made before removal from home is from one cause or another frequently incorrect, and it may be impossible to establish or refute it on the patient's admission to hospital. For instance, a child has a mild febrile attack with perhaps a slight sore throat, for which advice is not sought. The child, however, remains weakly, and a doctor is at last called in. He finds some doubtful evidence of desquamation, and perhaps a trace of albumen in the urine. The tongue may even show some slight papillary enlargement. There is a large family huddled together. The medical practitioner will scarcely feel justified in allowing the child to remain with the others till he be able to decide definitely. On the reception of such cases to hospital every effort is of course made to isolate them as effectually as possible, but the difficulty of doing so is often extreme, and in times of an epidemic quite impossible. If, then, such a case be seized with undoubted scarlatina after admission, the question immediately suggests itself—Was the first febrile attack a true scarlatinal one? If such cases be accepted in the category of relapses there is danger that the occurrence of true second attacks may appear to be more frequent than is really the case. So Dr. Caiger rejects all cases from his statistics in which the first attack was not absolutely typical and undoubtedly true scarlatina; and, on the other hand, the second febrile attack must also present all the typical features of true scarlatina. But we know that there scarcely exists a disease more "Protean" in its manifestation than scarlatina, and very many cases are met with which, though unquestionably scarlatinal, do not conform to type. The probability is then that statistics, founded on cases which have been subjected to this severe scrutiny and selection, will err on the side of moderation in the estimate of the frequency of relapse cases. Most conscientious men will prefer to underestimate than overestimate in such a matter.

Some authorities regard the tonsillar and faucial inflammation and ulceration, so frequently seen in patients in fever hospitals late in the period of their convalescence, as abortive second attacks, as well as those cases with faint scarlatiniform rash with or without elevation of temperature, and but slight, if any, constitutional symptoms during convalescence. Needless to say after what has been already stated Dr. Caiger does not include such cases.

During the time I was resident medical officer, three cases of undoubted so-called relapse were noted, but the total numbers, unlike those in the Metropolitan Asylums' Board records, were quite insufficient for statistical purposes. They all recovered, and they were all cases in which the first attack was slight though typical in all features. Dr. Caiger has found that the severity of the second attack is inversely proportional to that of the first.

Two years ago Dr. MacDowel Cosgrave read the reports of two cases of true early second attacks of scarlatina before the Royal Academy of Medicine in Ireland. In the discussion which followed, Dr. J. W. Moore pointed out that such cases were the peculiar product of isolation hospitals, and based on this experience an unanswerable argument for the establishment of convalescent fever hospitals in order that by the removal of convalescents from the vicinity of acute patients the risk of re-infection may be minimised.

ART. XIX.—*Recent Clinical Experiences of Septicæmia and Enteric Fever.*[a] By JOHN WILLIAM MOORE, M.D., Univ. Dubl.; P.R.C.P.I.; Senior Physician to the Meath Hospital and County Dublin Infirmary; Professor of Practice of Medicine, Royal College of Surgeons in Ireland; F.R. Med. Chir. Soc. Lond.

IN the belief that much may be learned from simple clinical records, I venture to submit a series of cases of what I believe to be manifestations of septicæmia. The first case was that of an old gentleman, who died of septicæmic endocarditis occurring in the wake of chronic disease of the gall-bladder. The second assumed the form of sapræmic enteritis in the grandson of this gentleman. The third was an instance of acute desquamative dermatitis, apparently caused by contact with toxic graveyard soil.

I have also to present clinical records of two unusual cases of enteric fever. In the former of these, two true relapses occurred within two months. The first relapse ran a course of sixteen days, the second one of fourteen days. In the other patient the brunt of the poison seemed to fall on the tonsils, and, subsequently, on the nervous centres, the intestines apparently escaping. Defervescence took place by crisis on the sixteenth day, the temperature chart in this respect resembling typhus rather than enteric fever.

CASE I.—On Wednesday, November 25, 1896, I was called to see an elderly gentlemen, residing at Rathgar, who had been suffering for a day or two from incessant nausea and vomiting, and agonising paroxysmal pain in the right hypochondrium. He had rapidly become deeply jaundiced, the urine was scanty and intensely dark, and any fæces which passed were clay-coloured and offensive. The region of the liver and gall-bladder was exquisitely tender on pressure. The liver was large, but smooth. A firm, globular rather than pyriform, tumour projected below its inferior margin, and was recognised as an enlarged and very tender gall-bladder. The patient was seventy-one and a half years of age; he had been in the Royal Navy, and had more recently served as a coastguard officer in Queensland, Australia. Up to December, 1894, when he was sixty-nine and a half years old, he had enjoyed excellent health. At the date mentioned the first of a series of attacks like that above described occurred. I had the advantage of perusing the following interesting notes of the case which had been taken by Dr. Wilton Love, M.B., C.M., Edin. (with Honours, 1884), of Brisbane, Queensland:—

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[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, November 18, 1898.

"*Nature of attack.*—Mr. T. J., aged seventy-one years; seen first Feb. 12, 1896, complaining of intense pain in right hypochondrium, extending towards the umbilicus; rigors. Pulse small and intermittent; hands and feet cold, with clammy sweat. The treatment adopted was $\frac{1}{6}$ grain morphia and $\frac{1}{150}$ gr. atropin hypodermically.

"Next day he was out of pain, but deeply jaundiced; pulse somewhat stronger and less intermittent; only 8 ozs. urine were passed in 24 hours. There was no albumen, but the urine was deeply stained with bile. Strophanthus tincture ♏iii. and strychnine gr. $\frac{1}{50}$ were injected hypodermically. The heart gradually recovered and the jaundice slowly disappeared, convalescence being delayed by a small abscess at the site of a needle puncture. This illness lasted about two months, and though careful search was made for gall-stones nothing solid was discovered.

"*Frequency of attacks.*—The above was probably the most severe attack the patient has had. In December, 1894, he had a somewhat similar attack, which laid him up for one week; this was the first attack. The patient gained health and strength, and remained well for nearly seven months. Next attack took place in November, 1895; much less severe, but similar to that described above. Attacks recurred pretty frequently during November, December, January, and February, 1895–1896.

"*Physical signs.*—Liver dulness never more than a finger's breadth below costal margin. At one time after an attack an obscure tumescence could be detected between the right mammary line and the outer border of the rectus, but this was always carefully looked for and observed only once; it will be seen that it was not a constant symptom. Some tenderness complained of in this situation on palpation, especially during or soon after a paroxysm. When jaundice came on the skin-tint was very pronounced, urine deeply bile-stained, and the motions were clay-coloured. As a rule the jaundice cleared off in a week or less. Search was made in the stools for gall-stones, but for some time without result. In November, 1895, some small, yellow, putty-like concretions were found; these showed cholesterin, and were fairly soluble in ether. Large numbers of somewhat similar bodies have since been passed from time to time. Lately they have been quite insoluble in ether, but saponify readily with caustic alkali. When first voided they vary in size from a split pea to a marble, and are usually bright yellow in colour, elastic in consistence (like a gelatine capsule filled with mustard), and more or less globular or ovoid. Olive oil has been administered several times, but these appear to be quite independent of the use of oil—they did not appear before when taking oil, and were frequently passed many weeks after the oil had been stopped. After keeping for a few days they shrink and darken in colour, and finally dry into a brown brittle substance not unlike the withered kernel of a filbert nut.

"*Treatment in brief.*—Cholagogues, phosphate and benzoate of sodium, olive oil, mineral waters, nitric acid compresses, milk dietary, have all been used from time to time as indicated.

"*Diagnosis.*—I believe the patient to be subject to attacks of catarrh of gall-bladder, and formation and passage of biliary calculi of a somewhat unusual composition.

"WILTON LOVE, M.B. Edin."

I saw every reason to acquiesce in Dr. Love's diagnosis, and prescribed Carlsbad salt, to be taken each morning; the bowels to be moved by compound aloin tabloids, and 30 minims of liquid extract of condurango to be taken in water twice daily before food. Fomentations were applied over the liver, and enemata of warmed sweet oil were administered.

On December 7, 1896, the patient was steadily improving. He was ordered to take 20 grains of benzoate of sodium with tincture of lemon and warm water in the early morning. On December 28 the note was—"Going on well, abdominal fulness less, getting rid of hard fæces mixed with soft stuff rich in bile."

I did not again see Mr. J. until April 22, 1897, when I found him wonderfully better, although a large abdominal tumour still occupied the epigastrium and the right hypochondrium. Mr. J.

continued to enjoy excellent health until February, 1898, when he passed through a sharp attack of bronchial catarrh. This affected his heart, the failing strength of which caused me some anxiety for a while. Tincture of quinine with tincture of nux vomica appeared to have the happiest effect in restoring the tone of the heart-muscle, and the patient quickly recovered, enjoying good health until Friday, August 26, 1898. On the evening of the day named Mr. J. complained of fatigue and of pain in the stomach. This became more and more intense, and was soon accompanied by vomiting, constipation, and the discharge of scanty high-coloured urine.

When I visited Mr. J. for the first time on Monday, September 5, he looked wretchedly ill, and the pain in the right hypochondrium was so intense that I gave a quarter of a grain of morphin hypodermically. Next morning jaundice was showing, and in a few days he had become intensely jaundiced. For some days both pulse and temperature remained subnormal. The liver was much enlarged; its surface was smooth. It was very firm, and exquisitely tender to the touch. The bowels were at first obstinately constipated, but on Saturday, September 10, great quantities of foul-smelling, mortar-like stuff, mixed with much blood-streaked mucus, began to pass from the bowels. The pulse now rose from 80 to 100, but the temperature remained at 97·9°. On Sunday, September 11, the patient was very prostrate and typical Cheyne-Stokes' respiration had set in. Dr. Craig saw him in consultation with me on the next morning, when he seemed to have rallied somewhat, chiefly under the administration of stimulants.

On Thursday, the 15th, for the first time a pericardial friction was to be heard. The pulse was soft, beating at the rate of 72. The axillary temperature was 97·4°; superficial bedsores were forming. Bile was now passing freely from the bowels, and the urine was less dark.

An endocardial murmur, systolic in time and heard best at the apex, now developed, and the failing cardiac impulse showed but too plainly the presence of an ulcerative endocarditis, the outcome of septic infection. Further evidence of such a condition was afforded by the rapid development of a wide-spreading erythema, and by an increasing pyrexia. Purpuric patches and petechiæ appeared in all directions.

Quantities of bile and mucus kept flowing from the bowels. Complete anuria set in, lasting for many hours, and the patient sank into an apathetic, stuporous state, from which he could with difficulty be roused. Nothing could surpass the fœtor of the sick-room at this time—as a matter of fact it caused one case of serious illness in a member of the sick man's family. The patient died at 10 35 a.m. of Thursday, September 22, about four weeks from the date of the attack. A *post-mortem* examination could not be made, owing to the non-consent of the relatives. The medical certificate of the cause of death was filled in thus—Primary: Cholecystitis, four weeks; Secondary: Septicæmia and endocarditis, one week.

CASE II.—On Saturday, September 24, 1898, I was summoned to see this old gentleman's grandson, Mr. R. B., aged nineteen, a medical student, who had been complaining for about a week of loss of appetite, sickness of stomach, and finally vomiting and diarrhœa, with fever. I found him in bed, looking exceedingly ill, with a thickly coated tongue, a rapid pulse (116), and an axillary temperature of 103·2°. He was passing frequent stinking motions from the bowels. His bedroom was in the return building, close to the water-closet in which the discharges from his grandfather had been kept for medical inspection. He himself attributed his illness to the unwholesome smells from this water-closet and in his grandfather's bedroom. I strongly urged that the patient should be at once removed from the insanitary surroundings, and accordingly he was, the same evening, admitted to a private ward in the Meath Hospital. He immediately began to improve, and in four days was convalescent. The only medicinal treatment was half ounce doses of the castor oil mixture of the British Pharmacopœia, 1898, with 7½ minims of compound tincture of chloroform and morphin (1898) every six hours. These castor oil draughts were discontinued on September 28th, when he was allowed chicken and bread and butter. I called the case "Septic Enteritis"—perhaps "Sapræmic Enteritis" would be a better term. The temperature observations were as follow:—

			A.M.	P.M.
September	24	-	?	103·2°
„	25	-	100·6°	100·6°
„	26	-	98·4°	99·6°
„	27	-	98·4°	98·7°
„	28	-	97·2°	97·9°

CASE III.—On Thursday, October, 20, 1898, Mrs. Mary Anne B., a widow, aged fifty-seven, whom I had known for at least twenty years as an exceptionally healthy woman, drove to my house in a hackney cab to consult me at my home-hour. She seemed weak and very ill. Her tongue was thickly coated. Herpetic ulcerations studded her lips and mouth. Her fauces were injected, and she had a soft cough which brought up a muco-purulent sputum with ease. Her pulse was quick and weak, but her temperature did not exceed 99°. Her hands, chest, neck, and the left leg were still beset with a scarlatiniform rash which had appeared for the first time on Sunday, October 16th, coming out in the following order—hands, wrists, left leg only, neck, chest, and stomach. The hands had swelled considerably after the rash came out, and they and the other parts invaded by it were intolerably itchy. Desquamation was already beginning on the hands, neck, and left leg, the skin on this leg being uplifted like the great scales of dermatitis exfoliativa. This leg had been the seat for many years of some varicose veins.

Believing that I had to deal with a case of dermatitis venenata, I questioned the patient at some length. I asked her had she been handling poison ivy (*Rhus toxicodendron*), a plant which it turned out she knew quite well, as also its toxic effects. At last I elicited the following history:—On Thursday, October 6th, she visited the grave of her daughter in one of the metropolitan cemeteries, that day being the birth-day of the deceased. She carried with her to the grave a bouquet of white flowers and some plants, with which to decorate it. She had neither spade nor trowel, and she carefully took off her gloves in order to avoid spoiling them. She then knelt down on the ground, presumably on one knee—the left one—and with her hands proceeded to scrape up the soil in handfuls, and to plant the roots or slips she had brought with her. After doing this, she returned home without having had an opportunity of washing her hands.

Mrs. B. took ill three or four days afterwards, feeling sick, languid, and weak. On Tuesday, October 11, she vomited and felt her throat sore. On the following Saturday, the symptoms increased, the skin became intensely itchy, and next day, as already stated, the rash came out in the order mentioned—first on the hands and wrists. Mrs. B. convalesced very slowly. On Saturday, November 12th, she was attacked with a pleuritic stitch in the left side, and since then she has been passing through an attack of subacute left pleuritis, with a very perceptible new leather creak.

On November 16, Dr. H. C. Earl examined a specimen of the very abundant muco-purulent sputum which was coming up. He reported as follows:—"This sputum contains no tubercle bacilli. There are very few micro-organisms present, and these are almost entirely staphylococci."

It is, perhaps, to the purpose to mention that this patient's deceased daughter, a married woman, aged thirty, had a rigor on

Wednesday, March 9, 1898. Next day I saw her and found the base of her left lung already solid, pulse 128, respirations 28, temperature 103·2°. This pneumonic fever ran a severe course, temperature rising to 104·7° even in the morning on March 17, and ultimately terminated in death on the twelfth day (March 20, 1898).

That the soil may become poisonous when the nitrifying process, which converts ammonia and organic matters into nitrous and nitric acids, is interfered with by non-äëration of the soil, or through a deficiency of lime salts, which facilitate the combination of these acids with bases, is quite intelligible. While the natural tendency is for the soil to purify and render innocuous the products of decomposition, under special circumstances this salutary process may not take place, and danger to health may result.

Dr. George Wilson, Medical Officer of Health for the Mid-Warwickshire Combined District, observes in the eighth edition of his Hand-book of Hygiene and Sanitary Science[a]:—

"It is being made clearer every day that the relations of soil to disease depend mainly upon its characteristics and conditions as a breeding-ground for micro-organisms. Pettenkofer and others had long ago maintained that the soil exercised a specific influence on the development and spread of infective germs, but up till quite recently it was held by bacteriologists that so-called pathogenic organisms were not, as a rule, propagated in soil, because they were crowded out or destroyed in the struggle for existence by the saprophytic organisms. . . . But the recent researches carried out for the Local Government Board by Dr. Klein, Dr. Sidney Martin, Dr. Cautley, and Dr. Andrews, go far to show that 'soil and circumstance,' as Sir Richard Thorne has so forcibly phrased it, do exercise a most powerful influence on the propagation, as well as control of pathogenic organisms, and that the old doctrine of filth and nuisance polluting air and water being prime factors in the causation of certain diseases, designated as filth diseases, still holds good."

The possible, if not the probable, causal relation of the state of the soil to Mrs. B.'s illness must therefore be conceded.

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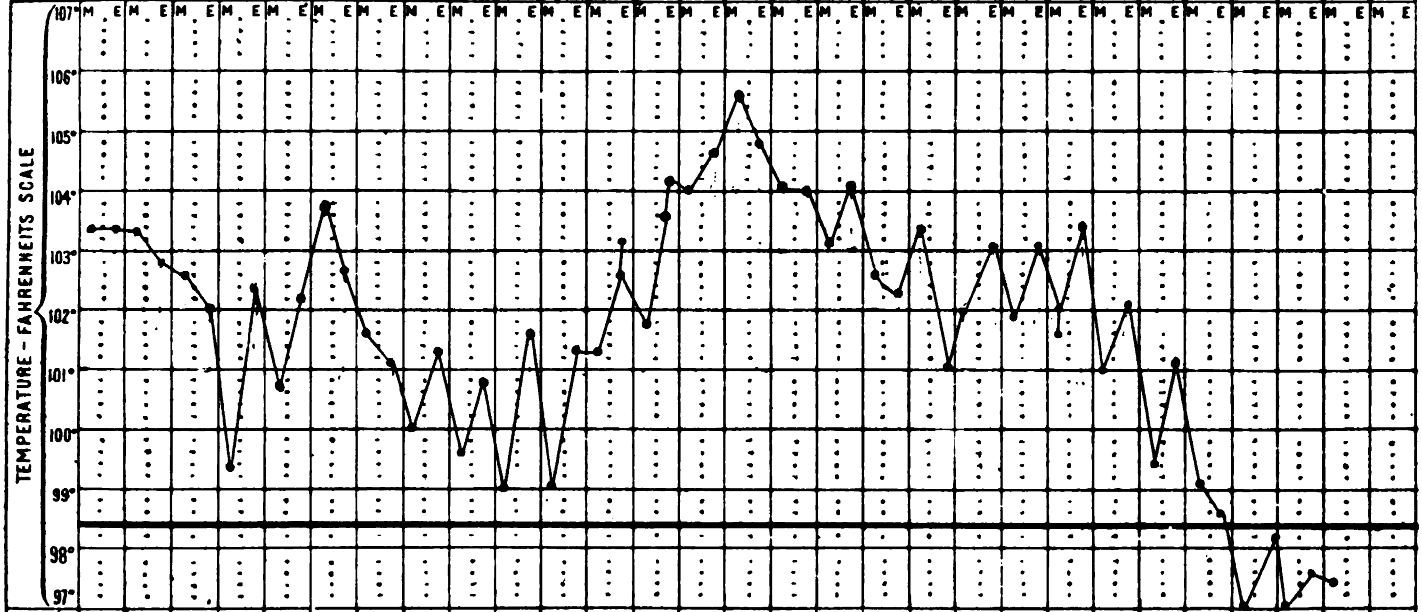
[a] London: J. & A. Churchill. 1898. Page 356.

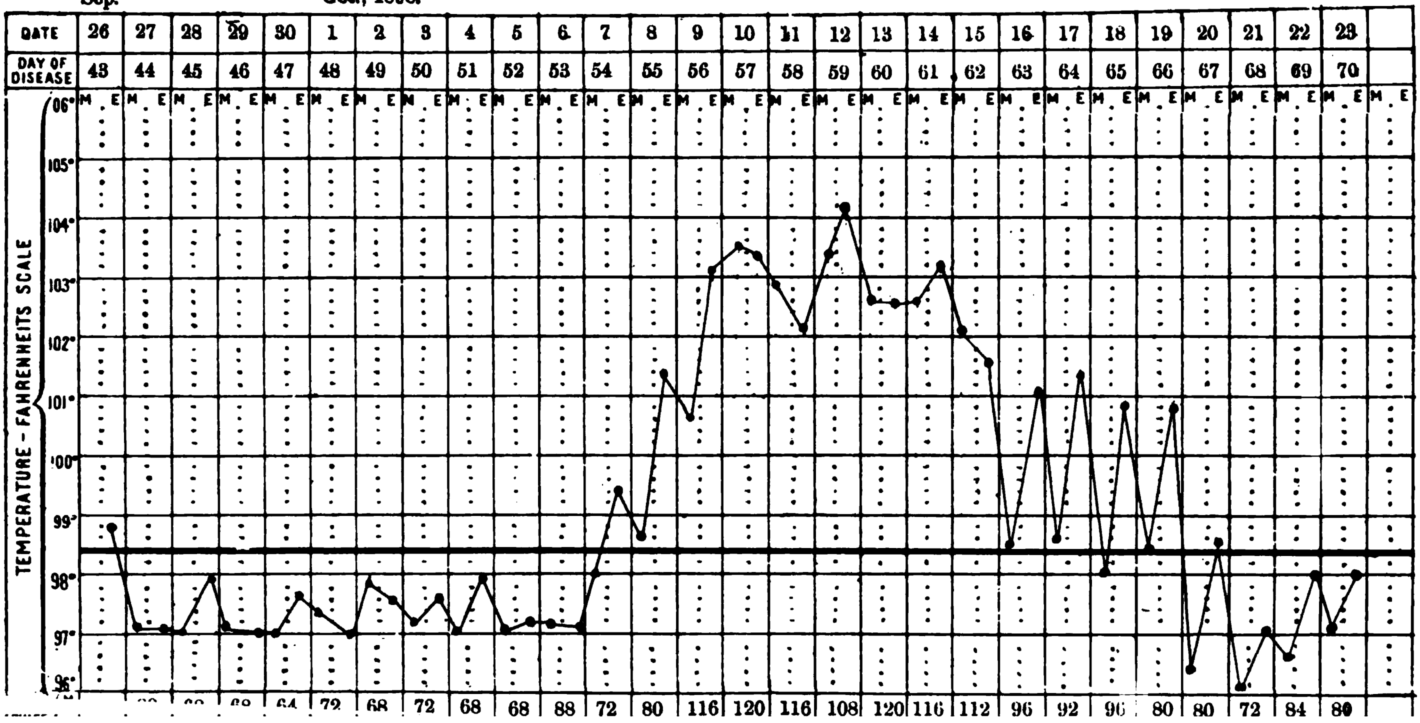
Aug. Sep., 1898.



DATE	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
DAY OF DISEASE	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
PULSE M	108	100	92	76	88	108	100	84	88	92	84	92	96	120	128	120	116	112	120	116	116	112	112	92	84	80	80	80
PULSE E	110	104	96	88	108	102	96	96	96	96	100	110	96	118	128	112	124	104	112	128	112	120	112	108	88	92	76	
RESP. M	24	28	28	24	28	28	28	24	24	24	24	28	20	28	24	24	24	20	24	20	20	28	20	20	20	20	20	20
RESP. E	22	24	28	28	24	24	24	24	24	28	24	26	20	26	28	28	24	20	24	24	24	26	20	24	20	24	20	
MOTIONS	I	3	2	0	3	2	2	2	3	1	3	2	1	2	4	1	1	1	1	1	3	2	2	1	2	1	1	
URINE																												

Miss M. Age—Nineteen years six months. Disease—Enteric Fever.

Sep. Oct., 1898.



Case IV.—On the afternoon of Sunday, August 28, 1898, I visited at Howth, in consultation with Dr. Wm. Greene, Miss Etta M., aged nineteen and a-half years. She had been ailing since Tuesday, August 16, and was believed by Dr. Greene to be, at the time of our visit, on the 13th day of typhoid fever. At 4 40 p.m. her temperature was 103·7°. The tongue was red and dry in the centre. There were a few rose spots. The spleen was considerably enlarged. The abdomen was distended and tympanitic. There was a serious amount of bronchial catarrh—almost justifying a diagnosis of broncho-pneumonia. As the patient was staying in a lodging-house, it was deemed advisable to remove her, and accordingly two days later she was admitted to a private ward at the Meath Hospital. There she progressed favourably and, after what seemed to be a final burst of fever on the 20th day (103·8°), appeared to be approaching convalescence. On the 24th day, however, she was not so well. The catarrhal symptoms increased, her tongue became coated, and gradually grave cerebral symptoms developed—delirium, sleeplessness, and tremor.

On the morning of September 13th—the 29th day from the beginning of Miss M.'s illness and the 6th day of the second fever—the temperature marked 105·6°, the pulse being 128, but the respirations not exceeding 30. Although the fever ebbed by degrees, Miss M.'s condition for the following week or ten days was most disquieting. Nevertheless, she emerged from this second fever unscathed and remained apyrexial for a fortnight precisely. Indeed, during this period the temperature was almost persistently subnormal, while the pulse fell to 64. Towards the close of this intermission, Miss M. complained of severe pains and tenderness in her feet and in the muscles of the legs and thighs, and the latter began to waste quickly, so that a diagnosis of infective peripheral neuritis was made. On October 7 (the 54th day from the beginning of the fever) the temperature began to rise for the third time, and Miss M. passed into another fever of fourteen days duration, the highest recorded temperature being 104·2° on the evening of the 6th day. Scarcely had this fever become established when the pains and tenderness in the feet and legs lessened, and in a fortnight they had all but disappeared. From the 3rd to the 7th day inclusive of this attack there was considerable diarrhœa, as many as seven motions being passed on the 6th day. The temperature chart in this remarkable case is appended.

Here was an instance in which two true relapses occurred in typhoid fever within two months. The first ran a course of 16 days, the second one of 14 days. The patient left hospital on Tuesday, November 8th, the eighty-sixth day from the beginning of her illness. Two days later she was looking and feeling well, except that she still complained of pains and tenderness in her legs and feet.

CASE V.—Edward D., aged twenty-one, a driver, was admitted to the Meath Hospital on October 26, 1898, on the fourth day of his illness, which was described as "acute tonsillitis." Next morning I examined him. His temperature was 101·4°. Although the fauces were abnormally red and congested, there was no material enlargement of the tonsils. The spleen was enlarged, but only two or three doubtful rose spots were observed on the front of the body. The pyrexia daily increased until a maximal reading of 106° was recorded at 5 p.m. of November 1st, the tenth day of the attack. The pulse-rate was only 102. There was a great deal of capillary congestion, like typhus. The cerebral stain (*tache cérébrale*) could be elicited with the greatest ease on drawing the finger-nail across the skin. The resulting red streak was intensely vivid and lasting. At this time the patient's condition appeared critical. He was placed in the wet pack, and tepid sponging was used with good effect. An improvement soon showed itself, and on the sixteenth day a defervescence by crisis occurred. After four days' apyrexia the temperature spiked slightly in the evening, and severe catching pain was complained of in the right infra-axillary region. This was evidently caused by a pleuritis sicca, for a *bruit de cuir neuf* was heard on auscultation, and occasionally friction fremitus was felt in the intercostal spaces near the seat of pain.

In this case the brunt of the poison seemed to fall on the tonsils—that first line of defence against the invasion of pathogenic micro-organisms—and subsequently on the nervous centres. The intestines apparently entirely escaped.

Although defervescence usually takes place gradually in typhoid fever—that is, by lysis—yet it may occur suddenly—that is, by crisis. Some years ago Dr. H. T. Bewley, F.R.C.P.I., kindly permitted me to publish a clinical chart of such a case.[a] In November, 1897, a very similar example of typhoid fever of short duration came under my observation in the epidemic wing of the Meath Hospital, in the person of a man, aged thirty-three years, who defervesced by crisis in the second week of his fever.

[a] See "Eruptive and Continued Fevers." Dublin: Fannin & Co. 1892. Plate VIII. Fig. 9. Pages 392–394.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Operative Gynæcology. By **Howard Kelly**, A.B., M.D.; Professor of Gynæcology and Obstetrics in The Johns Hopkins Hospital, &c. Two Vols., with 24 Plates and 500 Original Illustrations. London: Henry Kimpton. 1898. 8vo. Pp. 501., and Pp. 557.

It is a subject for congratulation that Dr. Howard Kelly has found time to produce the work before us, a work that may fairly be said to have no rival in the English language.

There are few who could approach this task with greater qualifications for success than the eminent author—Principal of a Gynæcological Hospital second to none in the world, and affording inexhaustible material. He is in possession of every requisite that science can devise, and is aided in his work by a staff of highly-trained assistants.

From him, therefore, much is expected, nor will those who read the book carefully be disappointed in this expectation, for we have here a work which, without a doubt, marks the high-water line of American Gynæcology.

Dr. Kelly is much more of a practical worker than student, and he, therefore, does not aim at treating the science and art of gynæcology in an exhaustive manner. It is in no sense a text-book, but must be considered rather as an expression of the author's personal experience—the value of which cannot fail to impress itself on the science of the present day.

The book is brought out in two large volumes, and is finished in every detail with a thoroughness we have come to expect in works of American origin. Plates and illustrations are almost, without exception, original; beautifully executed, numerous, and free from the stigma of immodesty—an objection (not without reason) urged against some modern illustrations in scientific American works.

Vol. I. is, for the most part, occupied with the consideration of general details and minor surgery, but is none the less worthy of the closest perusal. Asepsis and antiseptics are here dealt with from different standpoints. The theatre, its contents, air, water, instruments; the operator, his assistants, nurses; the patient, in turn, pass under review. Thus we read:—

"An assistant whose ward-work brings him into direct contact with abscesses, &c., must be debarred at helping at operations."

"The same brush must never be used by two different persons, or twice by the same person, without resterilization."

The following conclusions are arrived at from a series of bacteriological experiments carried out by the author's assistants—Drs. Griskey and Robb:—

"I. Staphylococci are present on the hands of all persons.

"II. It is impossible to get rid of these organisms by scrubbing the hands and nails for from ten to twenty-five minutes with a sterilized brush, soap and water at a temperature of 40° F.

"III. The bichloride of mercury solutions as used, up to 1 in 500, are not as germicidal as supposed, but they are inhibitory."

"The inefficiency of bichloride of mercury as a cutaneous germicide, can be tested for practical purposes by immersing the hands for ten minutes in a 1 in 500 aqueous solution, and then in a sterilized ammonium sulphide solution to precipitate the mercury.

"After this, by scraping the epithelium, cultures will usually be obtained that will grow in ordinary media."

If these statements are true (as no one who has studied the subject doubts), why, we ask, is not abdominal surgery confined altogether to specialists, whose work renders it imperative that they should avoid all forms of septic contamination?

Dr. Kelly finds the following method of disinfection satisfactory:—

"Hands and arms to be scrubbed vigorously with a clean brush and relays of hot water for ten minutes by the clock. To be then steeped in hot saturated solution of permanganate of potash; then in saturated oxalic acid solution, as hot as can be borne, until the deep mahogany changes to the natural skin colour. The oxalic acid may be removed by rinsing the hands in warm water."

The author is not satisfied with the sterilisation of catgut by superheated alcohol under pressure. This plan he employed from 1890 to 1894. In that year an outbreak of sepsis occurred which caused four deaths—strong circumstantial evidence pointing in each instance to catgut so prepared being the cause.

Cumol, one of the many tar products, and possessed of a high-boiling point, he now employs to bring about this sterilisation. The details, however, are complicated, and for a proper understanding of them the book itself should be studied.

The pathogenic bacteria met with in gynæcological practice are treated of in a most instructive manner in Chap. III.

The important feature of the following two chapters being pelvic anatomy, the study of this subject is approached by dissections from above and below. The topographical drawings to illustrate this section are taken from original dissections, and executed (as before remarked) in a style leaving nothing to be desired.

It is not, however, until the section dealing with bladder surgery is reached that the distinctive feature of the volume is arrived at. Dr. Kelly has long been recognised as one of the greatest of the original workers in this department of surgery, he having done more than any other surgeon to popularise direct exploration of the female bladder, and catheterisation of the ureters. We note also with satisfaction that he has not omitted to acknowledge his indebtedness to Pawlik, who has likewise devoted much time and ability to this branch.

A good description of vaginal hysterectomy for malignant disease is given, but we cannot find any mention of the "morcellement" operation, so much favoured in the removal of small myomata.

So remarkable an omission as this serves well to show how far removed this book is from being a full *résumé* of gynæcological practice. It is (as intended) nothing but the personal experience of a celebrated operator, and one, moreover, content with comparatively restricted methods.

Volume II. is almost entirely devoted to abdominal surgery, and here Dr. Kelly is at his best. Every detail as regards operating theatres, preparation of patients, of assistants, bystanders, &c., is minutely dealt with. Nothing is left here to haphazard surgery. The length of the abdominal wound to suit each particular case is given; exact information as to drainage is forthcoming; adhesions, hæmorrhage ligatures, and innumerable other topics are treated of with a minuteness altogether foreign to the majority of other works.

The article on peritonitis, and other forms of septic poiscning, is more instructive than any other we have read. It is written by a trained bacteriologist, who has extensively made use of culture observations as a routine part of his operations. Accordingly we find the subject treated of with a precision very helpful to those of us who, at times, are genuinely puzzled to account for symptoms differing in important points from the generalised descriptions of sepsis.

Dr. Kelly's method of performing hysteropexy—*i.e.*, the suspension of the posterior surface of the uterus to the abdominal wall—is worthy of note. The objections to the procedure which at once occur to one's mind appear to receive satisfactory answers at his hand.

We now turn to hysterectomy for a myomatous uterus—the most interesting of gynæcological operations. Here, as before remarked, Dr. Kelly's belief is centred in the abdominal operation. He describes his own special method with much minuteness—a brief outline of which may not be out of place here. It consists in tying-off of the ovarian artery and round ligament with separate ligatures on one side; then splitting the peritoneum from these points in front of the uterus and to the opposite round ligament. The tumour being now forced to the opposite side enables the divided peritoneum with the bladder to be reflected downwards, so as to bring the uterine artery within view; this is then clamped and divided. By means of a curved scissors the cervix is now cut right across, and the tumour still being rolled forcibly to the side brings the opposite uterine artery into view, then it is clamped and divided; the further steps of the operation being conducted on similar lines until the tumour is removed.

That this proceeding is an enormous advance on the older operations does not admit of doubt, but as to whether it will hold its own against Doyen's recent methods time alone can decide.

In the section entitled "Abdominal Hysterectomy for Carcinoma of the Uterus," certain rules are laid down which appear to us so important that we deem it advisible to render them in the author's own words:—

"These are the steps in the operation: (*a*) Catheterization of the ureters; (*b*) closing the cervix in carcinoma of the body, or of the vaginal vault in carcinoma of the cervix; (*c*) thorough disinfection of the vagina, which is then filled with a loose iodoform gauze tampon; (*d*) elevation of the pelvis and the abdominal incision exposing the field of operation; (*e*) ligation of the upper parts of both broad ligaments, including the round ligaments; (*f*) detachment of the vesical peritoneum and of the bladder down to the vaginal vault; (*g*) ligation of the right and left uterine arteries at their origin at the internal iliac arteries; (*h*) the dissection and freeing of the uterine arteries, with all the adjacent cellular tissue from the pelvic wall in towards the vault of the vagina; (*i*) setting free the ureters, which are lifted up and away from the field of operation; (*j*) ligation of the large uterine veins above and below the ureter and near the pelvic wall; (*m*) the opening in the vaginal vault is continued around to the right and to the left, clamping any actively bleeding vessels until the uterus is entirely freed; (*n*) as soon as the vagina is incised anteriorly, a loose iodoform gauze pack is pushed in, and as soon as the opening is large enough to permit it the lower part of the uterus and the vaginal vault are enveloped in gauze so as to prevent any discharge from contaminating the wound area; the gauze wrap affords an excellent hold for the operator in making traction upon the uterus, and it is gradually delivered; (*o*) bleeding vaginal vessels are controlled by catgut passed though the vaginal walls, but not including the mucosa; (*p*) the entire wound surface is minutely inspected, all oozing vessels controlled by catgut ligatures, and reinforcing ligatures applied to any important vessels where the first ligation seems insecure. . . ."

Nephrectomy and the radical cure of hernia are operations also enriched by the author's original genius, and, finally, we have to note an excellent description of intestinal resection.

A Manual of Bacteriology, Clinical and Applied. By RICHARD T. HEWLETT, M.D., M.R.C.P., D.P.H. (Lond.); Assistant in the Bacteriological Department, British Institute of Preventive Medicine. London: Churchill. 1898. Pp. viii. + 439. (Price not stated.)

DESPITE the unceasing appearance of new "text-books" and "manuals" of bacteriology we think that this, the latest candidate in the field, has claims to a hearty welcome. Dr. Hewlett's book is of moderate size, easy to read and thoroughly up to date. In fact it contains, scattered here and there, quite a number of good practical hints (what are commonly known as "tips"), attention to which will greatly facilitate the practical worker. For instance, on p. 45 we are told that potato half-cylinders for tube cultures should be left in running water under the tap for two hours before introduction into the test-tubes. This prevents the darkening which usually comes on during sterilisation, and spoils the appearance of the material—an observation in which the reviewer can cordially agree. Again, on p. 20 we find that should the indol reaction with sulphuric acid and a nitrite fail to "come off," we can often produce it by placing the tubes awhile in the warm incubator. These are just the hints needed by the working bacteriologist, and their frequent occurrence in Dr. Hewlett's book not only proves the author to be a thoroughly practical man, but entitles his book to a place in every bacteriological laboratory.

Most medical bacteriologists exhibit in their writings a lack of knowledge of general biology, and we regret to find that Dr. Hewlett is no exception to the rule. Thus, in the scheme on p. 6 we find the "fungi *or* (*sic*) moulds" spoken of as "multicellular and having a sexual mode of reproduction." This way of schematising the position of the fungi irresistibly suggests the French Academician's famous definition of a crab as "a little red fish that walks backwards.' A first year's student in biology would merely smile at the suggestion conveyed by the "*or*," that "fungi" and "moulds" are co-extensive terms; and the same student would, at a somewhat later stage of his career, be equally tickled by the statement that fungi are multicellular and sexual. Are the Zygomycetes multicellular? Are the Basidiomycetes sexual? These are the questions that would naturally arise in his mind, and lead him to wonder whence Dr. Hewlett had derived his biological training. A little further on (p. 9) we are told that "Shattock has suggested that in some rod-forms fission may occasionally occur longitudinally as well as transversely, which would account for the marked parallel arrangement of bacterial cells sometimes met with." Surely Dr. Hewlett has not forgotten that species are known—*e.g.*, Zopf's *B. intumescens* and Metchnikoff's *Pasteuria ramosa*—in which longitudinal fission is either (as in the first case) occasional, or (as in the second) the rule. A few lines lower down occurs the statement that "spores are single, one only forming in each cell," which might no doubt be accepted were it qualified by the word "usually." Prazmowsky's researches on *Clostridium butyricum* have, however, shown that this anaerobic organism occasionally produces two spores from the one cell. Further, the well-known Kefir bacillus, *Dispora caucasica*, actually owes its name to its capacity for doing that which our author asserts does not take place. The same character is possessed by Alfred Koch's *B. inflatus*, whilst the Russian botanist, Sorokin, has discovered a spirillum which actually produces three spores in a single cell. Many will look upon these points as unimportant, and so no doubt they are from the hygienic or pathological point of view. But we think it well to emphasise them because they illustrate the way in which bacteriologists are apt to forget that their science is but a branch of biology, and that in order to treat of it successfully and avoid error, acquaintance with the biological literature of the subject is a *sine quâ non.* Dr. Hewlett himself is quite sensible of this. On p. 98 he seems to deplore the fact that "modern methods" have had the effect of diminishing the attention paid to the exact morphology and biology of organisms, and quotes a long passage from Marshall Ward in support of his view. Is it not strange to find in his own work such glaring examples of the very fault he so properly condemns?

It is pleasanter to turn to features of Dr. Hewlett's "Manual" which deserve unqualified praise. Thus his brief account of the action of bacteria on dextro- and lævo-rotatory isomerides, and of E. Fischer's work on the constitution of sugars, is introduced at an early period in the work (p. 13), and is highly to be commended. So also is the short discussion of the important question as to the necessity for digestion of the microbic flora of the digestive tract. He quotes Nuttall's recent work as proving that by suitable precaution one can keep the intestinal canal of young animals sterile up to the eighth day of extra-uterine life, not only without injury, but actually with advantage to the subject. He might have added that it would seem as though the only obstacle to complete aseptic development of a Vertebrate were the enormous difficulties of *technique* involved in the experiment.

Another capital discussion is that of bacterial products—that of indol being especially instructive—whilst the all-important processes of ammonisation and nitrification that go on in the soil and are essential to the maintenance of organic life are clearly and succinctly described, due credit being given to the English observers, Munro, Frankland, and Warington, for their important labours which paved the way so successfully trodden by Winogradsky. It is a pity that Dr. Hewlett has not included the formula for the preparation of *nitrite agar-agar*, which has been found by Winogradsky so much more satisfactory than the troublesome silica-jelly plates, Warington's recipe for which is given in full.

Chapter V., on Immunity and Antitoxins, is a good discussion of this—which is one of the most difficult and intricate that biological science presents to the investigator. To completeness Dr. Hewlett's treatment has no pretensions; but it is clear, which is more than compensation for any lack of detail in the exposition.

Further on in the book we find an interesting chapter on the Pseudo-Diphtheria Bacillus and its relation to the genuine Klebs-Löffler organism. But surely there is a slip in the table on p. 182, where we find it stated that the latter is "*of the same diameter throughout.*"

One of the best and most instructive pieces of exposition by Dr. Hewlett is his chapter on the Tubercle Bacillus.

Here we find the new method for its isolation by means of potato cultures; the preparation and properties of tuberculin and Koch's recent modifications, TA, TO, and TR; the explanation of the peculiar staining reaction of the bacillus; the differences between its avian and mammalian varieties; and a discussion of the Report of the Royal Commission on Tuberculosis with regard to the dissemination of tuberculosis by the agency of infected meat and milk; and Delépine's new method for staining the bacillus in tissue-sections.

The last chapter but one is on the bacteriology of water, air, and soil, and here again we can only congratulate Dr. Hewlett on the way in which he has succeeded in bringing together the most accurate results and the most recent and approved methods for obtaining them. Dr. Hewlett's treatment of this important hygienic aspect of bacteriology leaves nothing to be desired in its completeness, and comprises such pieces of information as the construction of, and rate of filtration through the large sand-filters, used for purifying the water-supply of towns.

We observe that he adopts Abba's method of isolating *coli* from water, without, however, alluding to its now well-recognised drawback—its over-delicacy, which enables *coli* or *coliform* organisms to be obtained from almost any sample of water, thus involving a somewhat wholesale condemnation unjustifiable on general grounds. We note that the excellent Sedgwick-Rafter method for enumerating the non-bacterial organisms in water samples has been included.

Before closing our review we would gladly say something about the photographic illustrations, but think it more charitable to pass them over in silence. Fig. 41 suggests some weird, astronomical phenomenon of the sun-spot order rather than a "Giant cell containing tubercle bacilli;" and Fig. 36, the "Pseudo-diphtheria Bacillus," might be almost anything bacterial. The paper and typography are extremely good, and help to make the book luxurious reading. On the whole, this "Manual of Clinical and Applied Bacteriology" is what it professes to be, and we do not know where the English-speaking student or laboratory worker will find safer or more reliable guidance than in Dr. Hewlett's treatise.

Abdominal Surgery. By J. GREIG SMITH, M.A., F.R.S.E. Sixth Edition. Edited by JAMES SWAIN, M.S., M.D., Lond.; F.R.C.S., Eng.; Professor of Surgery, University College, Bristol. London: J. & A. Churchill. Bristol: J. W. Arrowsmith. 1898. 2 vols. Pp. 1171.

THE late Mr. Greig Smith's work on Abdominal Surgery is so universally known and appreciated that it seems scarcely necessary to review at any length this sixth edition, which differs but little from that preceding it. The book has attained to ponderous dimensions, and including, as it does, every branch of the surgery of the abdomen, it will prove no light task for even so competent an editor as Mr. James Swain to keep it up to date throughout. The efforts to render such a treatise exhaustive carries with it a degree of risk, and in the book as it now stands none can fail to see evidence of considerable inequality of merit. We find this not only in some sections, but also in certain elements of the whole. Pathology is, we think, notably defective, and consequently such subjects as appendicitis and general peritonitis fail to attain to the highest standard of excellence. It is with operative work that we more particularly associate Mr. G. Smith's name, and it is, we believe, to his treatment of this branch of his subject that the book owes its great reputation. Looked at from whatever point of view the descriptions of operations are in all respects excellent. The best methods are clearly and fully dealt with, and both in this and in the attention given to detail in after treatment the author has earned the gratitude of junior operators.

It is, of course, to be expected that the operator of experience will find much in the book with which he will not be in full agreement; this could scarcely be otherwise in such a growing and ever-changing subject as the surgery of the abdomen.

Surgical anatomy occupies a prominent place at the commencement of each section, and indeed we think it is allowed to occupy unnecessary space, for even the most junior operator may be supposed to be familiar with the anatomy of the abdomen. We may here draw attention to a curious error in the author's account of the normal spleen. The splenic vessels are described as running in the gastro-splenic omentum. These vessels, of course, lie behind the lesser sac of peritoneum, and could not possibly find their way between the folds of the gastro-splenic omentum.

The pages devoted to intestinal surgery are amongst the best and most interesting in the book. Simple methods are advocated in preference to more complex, and suturing without apparatus is preferred to suturing over any variety of bobbin. The advantages of these latter are, however, not overlooked. The method of suturing over a bobbin by ordinary purse-string sutures is not, we think, the safest or most generally adopted now.

In the section on kidney surgery we have noted one or two statements which appear to us open to criticism—"The mere presence of stone in the kidney is not, therefore, an indication for operation." This, for many reasons, we consider unwise teaching. The dangers attendant on delay have been well emphasised by Mr. Henry Morris in the Hunterian Lectures for the present year, and we are satisfied that immediate operation should follow upon the diagnosis of renal calculus. The author's teaching in renal surgery differs from that of the surgeon just named in other particulars. Compare these two statements—"Stone on one side may produce symptoms on the other," and "There is not, so far as I know, any case on record in which there is completely satisfactory evidence of symptoms on one side only being caused by a stone in the kidney of the opposite side." This latter is quoted from Mr. Morris. We think the following recommendation with reference to the fixation of a floating kidney of doubtful wisdom—"Local irritation with drainage may be provided by means of a large rubber tube placed along the kidney border." We have known considerable chronic pain follow upon a nephrorrhaphy, due doubtless to involvement of a lumbar nerve in the new scar tissue, and were we to follow the above advice we fancy this unpleasant sequel might become more frequent.

Apart, however, from defects which, as we have said, are unavoidable in a work of such extent, the book holds a foremost place in English medical literature, and will, we believe serve to perpetuate through succeeding generations the name and memory of its distinguished author.

A Synopsis of Surgery. By R. F. TOBIN, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin. London: J. & A. Churchill. Dublin: Fannin & Co., Ltd.; W. M'Gee. 1898.

THE history of the genesis and development of this very neatly got up—æsthetically bound, and throughly interleaved—little volume of 277 pages is told by the author in the opening paragraph of the preface. "For some years I have been in the habit of distributing amongst the members of my clinical class at St. Vincent's Hospital leaflets containing a synopsis of each lecture. It was done with a view to systematise my teaching, to lessen for the students the trouble of taking notes, and to save repetition by enabling me to make easy reference to subjects with which I had already dealt. These leaflets are now printed in a continuous form, together with an Address, which was introductory to the lectures in question."

The author is evidently an enthusiastic clinical teacher. He has no doubt that his function may be carried out so as to make "purely theoretical lectures unnecessary." But what are "purely theoretical lectures?" If a lecturer is worth anything he will take good care to avoid pure theory in his lectures, and to make them living word-pictures of disease based on practical experience.

Mr. Tobin is evidently a hearty sympathiser with the hard-worked student of the present heavily-weighted system. He has prepared for them an exceptionally neat volume, with the attractively practical features of convenient size, flexible cover, and complete interleaving. He gives a rapid sketch of all important surgical conditions which the student is called upon to observe, and the practitioner to treat.

Foremost among his authorities ("recognised teachers") Mr. Tobin places Erichsen. Oh, my profession! my profession! when will you be relieved from the incubus of authority? But we will not be captious, as we can cordially recommend this very convenient volume to the surgical classes of our hospitals. We congratulate Mr. Tobin on the conscientiousness, thoroughness, and good taste with which he has completed his self-imposed task, and feel sure that it will advance the reputation of the author, of St. Vincent's Hospital, and of the Dublin School of Surgery.

A Treatise on Aphasia and other Speech Defects. By H. CHARLTON BASTIAN, M.A., M.D., F.R.S. London: H. K. Lewis. 1898. Pp. 366.

THIS valuable work begins with an introductory chapter on the physiological and psychological data involved in a study of spoken and written language and their defects. The author discusses the cerebral processes on which speaking, reading, and writing depend. He believes that "speech has now become a truly automatic act for human beings, and that if children do not speak at birth this is in the main due to the fact that their nervous systems are still too immature. But when, in the natural course of development, the parts concerned have become properly elaborated, the highly complex movements concerned in speech may, under certain circumstances, be at once called into play, independently of previous trials and failures, just as the nervous mechanism concerned with the art of sucking may be called into play in the human infant at the time of birth on the presentation of its proper stimulus." This view is supported by interesting cases both ancient and modern, where children who had never spoken before, suddenly, under the influence of emotion, began to speak fluently and continued to do so.

The superadded powers of reading and writing are next considered, and the various kinds of word-memory. In this section the important distinction is drawn between memory, or the power of retaining knowledge in the mind but out of consciousness, and recollection, or the power of bringing the retentium out of memory into consciousness. "Loss of recollection may in fact depend upon one or other of two causes—either (*a*), upon some diminished functional activity—that is, diminished readiness to be roused—in the central nerve mechanisms in which the retentium is, so to speak, stored or rendered possible of revival; or else (*b*), upon some defect in this or that set of commissural fibres (associational channels). Loss of memory, however, in the strict sense of the term, implies disease of, or serious damage to, the central nerve units in which the particular retentium is stored up or registered."

> "In the case of words there are three distinct kinds or physiological types of memory to be considered, one of them existing in two forms, so as to make four varieties in all. These varieties of verbal memory are as follows:—1. *Auditory memory*, the memory of the sounds of words—that is, of the auditory impressions representative of different words. 2. *Visual memory*, the memory of the visual appearances (printed or written) of words—that is, of the visual impressions corresponding with different words. 3. *Kinæsthetic memory*—(*a*), the memory of the different groups of sensory impressions resulting from the mere movements of the vocal organs during the utterance of words—impressions from muscles, mucous membranes, and skin—that is, of the kinæsthetic impressions corresponding with the articulation of different words which for the sake of brevity I have proposed to speak of as 'glosso-kinæsthetic' impressions; and (*b*), the memory of the different groups of sensory impressions emanating from muscles, joints, and skin, during the act of writing individual letters and words—that is, of the kinæsthetic impressions corresponding with the writing of different letters and words, which I have for similar reasons proposed to speak of as 'cheiro-kinæsthetic' impressions. The organic seat of each of these four different kinds of word-memory is in relation with its own set of afferent fibres, and the several centres must also be closely connected with one another by commissural or associational fibres, so that the memory of a word or the recollection of a word in one or other of these modes doubtless involves some amount of simultaneously revived activity in one or two of the other word-centres."

The views of Dr. Bastian on the so-called cortical centres are peculiar, and differ materially from those of Ferrier and his school. As regards the sensory centres it is thought that "there must be certain sets of structurally related cell and fibre mechanisms in the cortex whose activity is associated with one or with another of the several kinds of sensory endowment. Such diffuse but functionally unified nervous networks may differ altogether from the common conception of a neatly-defined 'centre,' and yet for the sake of brevity it is convenient to retain this word and refer to such networks as so many 'centres.'"

As regards the "motor centres," Dr. Bastian denies the existence of cortical motor centres for the production of voluntary movements. He holds that "whatever the mode in which simple movements are produced, that is, whether they are voluntary or reflex, only one set of motor centres is called into play, and that these motor centres are situated in the bulb and in the spinal cord; and further, that the functioning of motor centres generally is attended by no psychical accompaniments." The centres of the Rolandic area then are, on this theory, mechanisms, which receive in-going impulses precisely similar to the cells on the afferent side of the reflex arc in the spinal cord, and like them communicate with the true motor centres of the bulb and cord. They are called consequently not motor, but kinæsthetic.

The four centres concerned with speech are localised as follows—the glosso-kinæsthetic centre in the posterior part or foot of the third frontal convolution; the cheiro-kinæsthetic centre in the posterior part of the second frontal convolution, but with less certainty; the visual word centre in the angular gyrus, and the auditory word centre in the posterior half or two-thirds of the superior temporal convolution. Between all these centres important commissural paths exist.

"In the study of speech defects it is therefore necessary to consider the effects of lesions in the following situations:—(*a*), in the different kinds of word centres; (*b*), in the different commissures by means of which these centres are connected one with another; (*c*), in the internuncial fibres connecting the two kinæsthetic word-centres with their related motor centres in the bulb and in the cervical region of the spinal cord; and (*d*), in these motor centres themselves which are concerned with the actual production of speech and writing."

After sections on the revival of words in thought and speech, in which the distinction of individuals into auditives and visuals is insisted on; and on the reasons for the predominance of the left hemisphere; and a chapter on the relations existing between thought and language; the classification of speech defects adopted by the author is given as follows:—

I. Defects due to subcortical lesions—
  A. *Disabilities in bulbar and spinal motor centres,*
  B. *Lesions in the course of the pyramidal system of fibres.*
II. Defects due to cortical lesions—
  (a.) *Paralytic Amnesia.*
  C. *Disabilities in cortical word centres—*
    (1.) In the glosso-kinæsthetic and the cheiro-kinæsthetic centres.
    (2.) In the auditory word centre.
    (3.) In the visual word centre.
  (b.) *Incoördinate Amnesia.*
    Showing itself in speech (paraphasia).
    Showing itself in writing (paragraphia).
  D. *Lesions in the course of different commissures—*
    (1.) In that between the auditory and the glosso-kinæsthetic centres.
    (2.) In that between the visual and the cheiro-kinæsthetic centres.
    (3.) In those between the auditory and visual word centres.
    (4.) In those between the general visual centre and the auditory word centre.

These different defects are then treated of at length in the following chapters. It would be impossible to overestimate the value of these descriptions. One hundred and fourteen cases are quoted to illustrate the different forms of speech defect, and the amount of learning and grasp of his subject displayed by the author is amazing.

Chapters on the ætiology of speech defects and on diagnosis follow. In the latter a scheme is given for the examination of aphasic and amnesic patients, in which 34 questions have to receive their answers. Such a systematic plan of examination cannot fail to be of the greatest assistance in the investigation of this difficult class of diseases. A table also is given, arranged in three columns; in the first the name of the speech defect is given, in the second its clinical characters, and in the third the site and nature of the lesion.

In the chapter on prognosis the chances of recovery, complete or partial, are considered under the heads of functional restitution or recovery of the damaged part; and functional compensation, when the improvement is due to the taking on by the other hemisphere of the functions of the permanently damaged side. A very interesting section is given on the capacity for exercising civil rights by persons suffering from aphasia. Finally, there is a section on treatment, in which are many interesting records of the good results which may follow persistent and systematic education of the undamaged side of the brain.

Physiology, Experimental and Descriptive. By BUEL P. COLTON. London: The Scientific Press. 1898. Pp. 423.

THIS may be described as a popular work on physiology in which the student is taken on from the simple to the more complex gradually, and in the order in which the different phenomena would naturally present themselves to his observation. Every step is supposed to be made secure by simple experiments performed by the student himself, and by reference to drawings, dissections, and models. The book is copiously illustrated by drawings and diagrams, many of them very ingenious and all more or less illustrative. On the whole the book is exceedingly good, and we do not know of any other work which could better take the place of a first guide in the study of this difficult and unpopular—with students—but all-important subject. The book, however, would be nothing without the practical exercises, and these would necessitate the teacher and a certain, although not very considerable, amount of teaching plant and material. The entire subject of physiology is considered in its relation to hygiene, and the necessity of a good and sound knowledge of physiology in order to be able to prevent disease and prolong life is continually kept in view. The balance of the different subjects is fairly kept, but according to the modern American custom is lost in devoting 16 pages to a statement of the action of alcohol, the outcome of which is that everyone who tastes alcohol necessarily contracts a propensity to take it in excess. The book, however, is an effort in the right direction to substitute observation for memory, and we think there are few teachers who will not benefit by its perusal, for, although many might be inclined to modify the details of teaching laid down, the principle is unquestionably good.

The Ferment Treatment of Cancer and Tuberculosis. By HORACE MANDERS, F.R.C.S., M.D. London: The Rebman Publishing Co. 1898. Pp. 251.

THIS treatment, first introduced into practice by De Backer, consists in the administration of pure cultivations of the yeast plant. The yeast is in some cases injected hypodermically (tuberculosis, typhoid, diphtheria, &c.)—in some cases injected into the neighbourhood of the disease (*e.g.*, in cancer), in other cases it is applied locally, dry yeast being powdered over cancerous ulcers, and in others it is administered by the mouth (furunculosis).

Dr. Manders seems to describe how a pure growth of yeast is obtained, but he omits several most important matters—for example, the fluid in which the yeast cells are kept and which is injected into the body with them is left undescribed. We are only told it is called "Wort No. 2," and that its composition is varied according to the nature of the disease to be treated.

The results of the treatment are very imperfectly given. We are told of improvement, but a sufficient number of statistics is not published to enable us to form any opinion. Indeed, in the case of one of the diseases mentioned in the title of the work—cancer—we are given no details whatever as to the results produced, but are promised them in a forthcoming series of monographs by Dr. Manders. There is a great deal about the yeast treatment in typhoid, and one case recorded. Truly it is recorded with a vengeance, for it alone occupies over twelve pages.

Our chief objection, however, to Dr. Manders' book is that the little the author has really to say about his mode of treatment is almost lost in a vast amount of writing about irrelevant subjects. Early in the book we find a description of the blood. We are told a good many things about bacteria in general with which it is to be hoped that the profession is familiar; we are told all about the various ways in which tuberculosis can invade the human organism; we have a good deal about the "Glycogenic Functions;" and, finally, we have a glossary at the commencement of the work, in which we find that caseation means "conversion into a yellow cheese-like substance;" germicidal means "possessing the power of killing germs;" and epithelium is "the most superficial cells of the skin or mucous membrane."

Truly Dr. Horace Manders, F.R.C.S., M.D., must have a very low opinion of the knowledge possessed by his fellow-practitioners if he imagines they need to have such terms explained to them.

We must, however, add that a suspicion has crossed our mind that the book is intended as an elaborate advertisement addressed, not to the medical profession, but to the laity.

The Diseases of the Nervous System; a Hand-book for Students and Practitioners. By CHARLES E. BEEVOR, M.D. Lond., F.R.C.P; Physician to the National Hospital for the Paralysed and Epileptic, the Great Northern Central Hospital, and the National Orthopædic Hospital. With Illustrations. London: H. K. Lewis. 1898. Pp. 432.

THIS work on diseases of the nervous system is intended for students and practitioners. We should say that it is more suitable for students who need a work introductory to the subject. It differs from most of the well-known text-books, in that it is much briefer; in fact, the ordinary works on Practice of Medicine contain as much information on nervous diseases as does the work before us. On the other hand, it differs from the text-books on medicine, in that it gives a good, though necessarily brief, account of the anatomy and physiology of the nervous system, and also contains chapters on the mode of examining patients affected with nervous diseases, and on the method of taking a case.

Dr. Beevor has succeeded in producing an excellent work.

He has been happy in his choice as to what should be inserted and what omitted. The introductory chapters on anatomy and physiology contain those facts which a student must know, while they are not overburdened with details. We wish, however, that some of the woodcuts, especially those representing the cross sections of the spinal cord, had been larger and clearer.

The articles on the various diseases contain really all that it is necessary to know: the descriptions are, of course, somewhat dogmatic, but in a students' work that is no disadvantage. The sections on treatment strike us as containing wise and sound advice.

The book is excellently printed, and Dr. Beevor's style is clear and easy to read.

A Manual of the Practice of Medicine. By FREDERICK TAYLOR, M.D., F.R.C.P. Fifth Edition. London: J. & A. Churchill. 1898. 8vo. Pp. 1002.

THE fifth edition of Dr. Frederick Taylor's Manual of the Practice of Medicine has appeared, and the three years which have elapsed since the fourth edition was given to the profession have not been so prolific in medical discoveries as to have added many pages to the useful little work.

It is true the volume is of greater bulk, and contains some fifty additional pages, but this is due in a great measure to the larger page and clearer type that have been wisely introduced rather than to an increase of matter that is fresh.

There are wise men who denounce such a work as Taylor's, and call it meagre, scrappy, and undigested, but there are just as able men who are pleased to think that the ordinary student and the general practitioner will lay hold of information which is precise and limited, but who would entirely avoid a Brobdingnagian volume whose theories fogged their brains, and left them in the mists of doubt. Taylor's manual undoubtedly has its use, and has certainly attained the end for which it was written; more than this, the practitioner who is familiar with its contents is assuredly far from ignorant of the practice of medicine.

Let us then briefly notice in what directions recent literature and investigations have been now called into service by the author.

The general anatomy of its own particular branch takes a place in the introduction to diseases of the nervous system, so that an opportunity has been afforded to explain the meaning of neurons. The chapter on aphasia is much improved. The characters of the blood corpuscles in pernicious anæmia and leukæmia respectively has been, to some extent, brought up to recent knowledge. The former teaching that the various forms of ringworm were due to the same fungus has been abandoned, and the present views as to different forms of parasite being present, based on the researches of recent years, have been adopted. The diseases which take a place in the book for the first time are—(1.) Glandular fever, of whose separate entity many are still doubtful. (2.) Divers' paralysis, the cause of which is attributed to the pressure on the spinal cord produced by the rapid escape of blood gases forced in by pressure as soon as the external pressure is removed by the return of the diver to the upper air. (3.) Erythromelalgia, or acute pain in the feet and legs, associated with dilatation of the vessels, whose origin offers a splendid scope for speculation, but the description of whose symptoms is strangely like the milder forms of Raynaud's disease. (4.) Angeio-neurotic œdema, whose title is explanatory, and describes in itself nearly all that is known of the affection. Quincke recognised the condition with which the name urticaria œdematosa was associated. (5.) Hypertrophic pulmonary osteo-arthropathy, which is scarcely worthy of so high-sounding a title. The clubbed terminal phalanges, associated with many chronic pulmonary and cardiac complaints, are things of the past. We are still left the clubbed phalanges in congenital malformations of the heart, due to chronic stagnation of the blood; but in speaking of a like condition in pulmonary cases we must name it as above, and discuss the theories as to its origin. (6.) Tubercle of the skin other than lupus, or verruca necrogenica. (7.) Pulmonary aspergillosis, occurring amongst pigeon feeders.

Such are the additions which a few years have brought to us, yet no one can say that they occupy much room in the book, or have squeezed out material which is more useful.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

Presidential Address.[a] By A. W. W. Baker, M.D., F.R.C.S.I.; University Examiner in Dental Surgery.

In returning thanks for the honour you have done me in selecting me as your President I am using no empty form, as I esteem it a very great compliment to be asked to fill such a position; and can only say that, I trust, in filling it I may be able to help in the excellent work which I look forward to this Society performing—viz., furthering your professional education.

But any pleasure that I naturally feel on such an occasion as the present is sadly tempered with regret by the enforced absence of one who would have been with us had his health permitted. We must always remember that to Dr. Stack is due the credit of initiating dental education in this city; and however the views of men keenly interested in a special subject may differ, yet, as one of his colleagues from the foundation of the Dental Hospital of Ireland, I must bear testimony to the unflagging energy and earnestness which he devoted to the cause he had so much at heart, and to which unsparingly he gave so much of his time. I am sure that anything that I can say about the Dean will be cordially endorsed by those present who have had the advantage of his teaching. Let us hope that his example will not have been in vain, but that we all will be ready to work as keenly as he has done to make our Dental Hospital second to none in the kingdom, both as a charity and a teaching institution.

At the inaugural meeting of such a Society as ours it will not be amiss to say something as to its special aims and objects. I have already said that I look forward to its performing a very important part in your education; for, although your teachers may devise lectures and demonstrations which to us may seem models of clearness, and leave nothing to be desired but for the student to apply the principles we have inculcated in practice, yet how often do we find, by some chance question on the student's part, how wide of the mark have all our labours gone. The lesson we have sought to convey has not gone home—there is still something wanting. That something, I believe, will be found in this Society. In order to bring forward communications the members must read, and not only read but think over what they have read, in order that the process of digestion and assimilation may take place in the brain as in another more material portion of your organism. It is not in the nature of things, nor is it indeed desirable, that your communications should be original—you must walk before you can run. But it will be of great profit, not alone to yourselves but to your fellow members, if each man in his turn will work up and digest what the various authorities have to say on such subjects as the preparations of cavities, methods of inserting gold, amalgam or white fillings, the preparation of mouths for dentures, taking impressions, regulating devices, or any of the various problems that confront us in everyday work. Believe me, on all these subjects we never know so much that there is nothing left to learn. And, if I may make a confession, I am more often attracted by those articles in the journals on subjects of everyday work—such as the best way of inserting an amalgam plug—than by a learned paper on a subject that does not so directly concern us. Not that I wish for a moment to be understood as undervaluing scientific work, which I regard as the foundation upon which all our practice rests, but I wish to impress on the members the interest which attaches to what may seem to them trivial detail. Exhaustive reading on all subjects is not within the reach of students, but it is possible for a man to master, to a certain extent, one special point, and then to make it instructive to his fellows. Fortunately the day has long since passed when the laboratory processes and operative technique were jealously guarded as trade secrets not to be revealed outside the precincts of the master's house; our information on any subject is now fortunately common property, and, as in other liberal professions, we are anxious to exchange our views with one another on matters of common interest, with the natural result of mutual improvement and a higher standard of excellence in our services to the public; and while engaged in the exchange of our ideas on topics of professional interest we insensibly get to know one another better, and thus a further good results from our intercourse. Such a Society as ours will tend to round off the corners that so often make their appearance when a man works apart from his fellows; we learn to be tolerant of each other's views, and, instead of thinking that our methods must of necessity be the best, we learn to reflect that in many cases, after all, perhaps we have not got hold of the right end of the stick.

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[a] Delivered at the Inaugural Meeting of the Dental Students' Society of Ireland.

If the spirit which I have barely touched on takes root and flourishes, as I trust it will, in our Society, it will lead to an unwritten code of professional ethics, the fundamental principle of which is that you act towards your professional brother as you would like him to act towards yourself. This is a subject that you will realise more fully when you leave these walls and engage in the actual battle of life in practice; but as you cannot too soon accustom yourself to the habit of forbearance in passing judgment, I would remind you that patients from various motives will seek to get adverse criticisms from you on the operations and methods of your professional brethren. You may hear that your professional brother has failed in extracting a tooth to-day—remember that from causes beyond your control the same accident may happen to you to-morrow; his filling has come out—do not be too sure that yours never do likewise because you do not happen to have heard of it, for as a rule our failures do not come back. Or, again, do not flatter yourself that you are the only man whose patients do not leave him. Many patients wander all round the city to different practitioners; but if you have done really good work for them, they will find it out and come back to you in the long run. I have laid stress on these facts of practice in order to show you the necessity of a large measure of charity in our estimate of each other's work; and although it applies, perhaps, more fully at a later stage of your career than the present, still the hospital is more or less a miniature world, and the manly and straightforward principles that you endeavour to act up to here will stand you in good stead in the wider sphere for which your hospital training is the preparation.

Now, if I, your President, may offer you some advice as to the working of your meetings, I would strongly urge you to rely on your own members for communications. The staff of the hospital have their own Society, where they can unburden themselves of their surplus information; and the discussion will be freer and more spontaneous if here you are unfettered by the presence of senior men. If, on the contrary, you look to some of the staff to supply the materials for your meetings, your members may get shy of making remarks, and thus defeat the object for which your Society was formed. I have offered a prize for the best essay of the Session, and in doing so have hoped to stir up a healthy spirit of competition. There is no reason, if it seems good to you, why some of the funds of the Society should not be devoted to a similar purpose, so that more than one member should have a chance of earning distinction. I merely throw this out as a suggestion to be acted on or not as your Council think fit.

There is one important aspect of this Society which it shares with all medical and college societies—viz., that it forms a most useful school where a man may learn the art of giving his ideas shape in words—I mean the art of debating. To be a ready speaker is not given to all, but much may be done by practice. Look up the subject of the evening beforehand, and by all means do not let an occasion slip without saying something. One never knows how a chance remark, by opening up a new aspect of a question, may lead to a most interesting discussion, but bear always in mind that your remarks must be addressed to the chair and interest the entire meeting.

With a view to collecting materials for your meetings your work will have an additional interest; you never know when a specimen may crop up in the extracting room or a case in the filling room that may properly find their way here among the casual communications; and remember how much the value of any case is enhanced by accurate notes taken at the time, while all the facts are fresh in your mind and the patient is there to be cross-questioned. And I would also have you bear in mind that there is a vast amount of material to be drawn upon in the mechanical laboratory—wrinkles and methods familiar enough perhaps to you, but often new to others; and last, but not by any means least, instructive cases from the anæsthetic room.

It was suggested that in addressing you I should endeavour to give you some hints as to the form in which to present your communications—in other words, to induct you into the mysteries of paper-making. It is not such a formidable affair as it seems at first sight. First of all, as they say in the cookery books when treating of the manufacture of hare-soup, you must catch your hare—you must determine what it is you want to write about. If you have a specimen that is fairly uncommon write a short but accurate description of it, omitting no essential detail; then any facts in the patient's history which might account for its occurrence; any special operative procedure by which you obtained it; refer, if possible, to the literature of the subject in the journals and various dental authors, such as Tomes, Salter, Coleman, Smale and others; note how your specimen corresponds with or differs from what they have described. If it admits of a microscopic section being made from it, either do it yourself or get some friend to help you, as it greatly increases the interest of any communication.

Again, suppose you take up some subject that you have been thinking over or working at, such as replantation or rootfilling, you may adopt the historical method and go back to John Hunter, and describe his methods; or, if you wish to begin at the beginning, go to the library of the College of Surgeons, and find out what Celsus and Hippocrates had to say on such subjects; but, for all practical purposes, a retrospect of thirty or forty years will be quite sufficient. Then see how the statements of different authors vary, endeavour to reconcile them; or, if such a course is not possible, show why they must of necessity differ. Draw your own conclusions as to the treatment you prefer. A good discussion among the members of the Society over such debatable material will then settle the whole question.

Writing good papers, like debating, requires practice. Do not expect too much at first; stick to it steadily, and it is wonderful how you will improve. It will help you to focus your information, systematise your reading, and (not the least important consideration) give you a very considerable lift in the examination hall.

I trust that the few hints that I have given you, though I feel they are far from perfect, may be of some use; and it only remains for me to wish that the first Session of the Students' Society may be a most successful one.

THE ADVENTURES OF A MEDICAL CHEST.

A MOST interesting "Tabloid" Medicine Chest has just been returned to Messrs. Burroughs, Wellcome & Co. by an officer of the Congo Free State, who recovered it from natives near Kenia, in the Aruwhimi Dwarf Country. This chest formed the last medical equipment of Emin Pasha, Gordon's Governor of the Equatorial Sudan, and was supplied to him just before he started on his last expedition to Central Africa. The case accompanied him throughout his subsequent travels, and was taken by Arabs after his massacre at Kibungi, in October, 1892. After passing through many adventures it was recaptured by Baron Dhanis, Commandant of the Congo Free State Troops, after the battle of Kasongo, in which the Congo Arabs were defeated. Emin Pasha's journal and a quantity of his property were recovered at the same time, but the "Tabloid" compressed drugs which had been in the chest were found to have been removed. The chest was subsequently stolen by natives, and before its final recovery was used as a village treasury chest.

CLINICAL RECORD.

Menstruation Arrested for Six Years; Vicarious Mammary Symptoms and Obesity; Cured by the Intra-uterine Stem in Four Weeks. By JAMES R. WALLACE, M.D., F.R.C.S.I.; Fellow of the Obstetrical Society of London; formerly Resident Surgeon to the Eden Hospital for Women and Children, Calcutta.

MRS. ——, an Anglo-Indian lady, twenty-nine years of age, one of a family of six children, two of whom are obese and three are slightly built. She is one of the stout ones. Her parents are both stout. She began to menstruate at twelve, and was of spare body at that time. She was quite regular in her courses, both as to time and quantity. She married at twenty-three. Her husband stayed with her eight months, and then left her on the plea that they were not rightly mated sexually. She was sexually impotent. She did not conceive. She menstruated regularly during the first eight months of her marriage, that is, while her husband lived with her; but with his departure in 1892 she ceased to menstruate. At each subsequent month for four days, corresponding with her catamenial epoch, both her mammary glands became swollen, hard, painful and full of milk, which poured away freely from both breasts. It diminished after two days, and quite stopped on the fourth day. She suffered from no pain about the pelvic organs during this period of vicarious "menstruation," and beyond the tenderness produced by this periodical mammary turgescence, her health suffered in no way whatever. This regular change began with the "period" due after her husband's disappearance, and continued up to the time she consulted me in February, 1898—*i.e.*, for six years nearly! Another marked physical change which was concomitant with the stoppage of the regularly menstrual flux was the rapid development of obesity. She weighed seven stone at her wedding in 1892, and had reached the tidy figure of seventeen and a half stone in February, 1898, when I weighed her. Her appearance at this time was one of perfect health. She presented the picture of a bright, energetic, well-fed, contented woman of thirty, and was perfectly robust and healthy complexioned. I was called to see her in February, 1898 for a sudden attack of catarrhal fever. Her temperature had gone up to 106°, and she was delirious and suffering with a deal of pain and tenderness about her hypogastrium. I heard the history of her life, but did not feel convinced at the time that the febrile disturbance was in any way connected with her strange menstrual experiences. With diaphoretics and sedatives the acute trouble passed off, but the uterine distress continued, and with it the usual mammary engorgement and lacteal secretion. With such a remarkable and characteristic history of functional generative disturbance, I surmised that the present unusual symptoms were connected with undue exaggeration of uterine efforts to obtain menstrual relief by the natural channel. I therefore suggested the use of an intra-uterine stem, which was introduced on the 25th February. This operation was followed in twenty-four hours by a discharge of blood per vaginam, which lasted for three days. Four weeks later there was another attack of fever with high temperature, uterine pain and mammary turgescence, which however was much less than usual, and subsided within twenty-four hours. Every month since then the catamenia have come with perfect regularity with an interval of four weeks, lasting freely for four days, without febrile disturbance. The mammary engorgement has steadily decreased each month, till now there is scarcely more than a sense of mere fulness, without tension or pain, and absolutely without the formation of any secretion. Another very remarkable and very welcome change to the patient, is the lessening of her bodily weight, for she has lost more than two stone within the past six months. No medicines have been given, and every beneficial change that has resulted must be attributed to the use of the intra-uterine stem, which was kept *in situ* for six weeks only.

Remarks.—This case is remarkable in emphasising the strange incidence of a pathological arrest of a physiological function, dependent entirely upon the withdrawal of sexual stimulus. Such a pathological phenomenon is all the more remarkable as occurring in a woman in whom the sexual appetite—as gauged by the entire absence of sexual organism—was so completely in abeyance.

THE KINEMATOGRAPH IN MEDICINE.

The use of the kinematograph in medicine was demonstrated at one of the Berlin photographic societies. It is clear that "animated photographs" of the abnormal movements of certain diseases must be useful to physicians, not only as documentary evidence, but also for purposes of study, as by their help any phase of the movement in question can be examined separately and at length. The series shown in Berlin represented the walk of a case of tabes dorsalis, and the negative had been taken in Professor Mendel's clinic.—*British Medical Journal.*

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—**Edward H. Bennett**, M.D., F.R.C.S.I.
General Secretary—**John B. Story**, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—**Sir William Thomson**, F.R.C.S.I., President of the Royal College of Surgeons in Ireland.
Sectional Secretary—**John Lentaigne**, F.R.C.S.I.

Friday, May 13, 1898.

The **President** in the Chair.

A Case of Perforating Gastric Ulcer successfully treated by Operation.

Mr. John Campbell gave the history of a case of this disease.

History.—The patient was a widow, aged thirty-five years. Twenty years ago she had suffered for two years from persistent pain in the gastric region, which was aggravated by taking food. This disappeared, but for eighteen years she had been subject to attacks of pain of a neuralgic character, which occupied various situations—head, face, side, &c.—came on at irregular intervals, and were relieved by quinine. About the beginning of July, 1897, an attack of apparently the usual character came on. It was, however, noticed by Dr. O'Hara that the paroxysms had a distinct relation to the times of taking food, occurring about three hours after meals. Vomiting after food took place twice. Under dietetic treatment the symptoms were becoming less acute, when, on July 20th, 1897, she took a small quantity of porridge and milk for supper at 9 p.m., and at about 10 30 retired to bed, and fell asleep. Before 11 she was awakened by a sharp pain in the abdomen, which she recognised as more severe than any she had previously felt. It increased in intensity when she got out of bed. Dr. O'Hara saw her at 1 30 a.m. She had then great pain in the left of the epigastric region, and had vomited twice since the seizure. There was some rigidity of the abdominal muscles, and no alteration in normal liver dulness. The pulse was 80, and the temperature normal. She got one-sixth of a grain of morphia hypodermically, and ℥iv. of brandy by the rectum. At 1 30 p.m. on July 21st she was complaining of some pain in the epigastric region, and of inability to lie down, preferring a half sitting posture in bed. Her pulse was 104, her temperature 101, and her abdomen was considerably distended and tympanitic. As the pulse and temperature had been getting worse hour by hour, it was decided to operate at once.

Operation.—Accordingly chloroform was given by Dr. Mullan, and I proceeded to open the abdomen, Drs. O'Hara and Currie assisting. A median incision in the epigastrium allowed some gas to escape, and showed the front of the stomach to be covered by milky fluid, which welled out of the wound, and was sponged away to the amount of about two ounces. Many patches of lymph were seen towards the upper border of the stomach and across the front of it towards the left. The thickness of the abdominal walls rendered a longer incision necessary, and it was accordingly extended from one and a half inches below the ensiform process to an inch below the navel. Careful inspection then detected greenish fluid welling out of the stomach near the lesser curvature and about an inch from the pylorus, the perforation being as large as a three-penny piece. Below and on the left the aperture was bounded by apparently normal stomach wall, and above and on the right by a mass of cicatricial tissue as thick as the forefinger. The opening was plugged with gauze, and the stomach area was packed round with towels which had been recently boiled. The edges of the opening were then trimmed with scissors, the cicatricial tissue being freely removed, except above, where cutting it away caused free bleeding. The raw edges were brought together by a continuous suture of fine silk, including the whole thickness of the stomach wall. Over this about a dozen interrupted Lembert sutures were placed, and over all a piece of small omentum was tacked down by a continuous suture. The abdomen was cleaned by gauze sponges. A gauze drain was inserted in the upper angle of the wound, reaching well over towards the spleen, where the gastric contents had spread most freely. The lower three-fourths of the wound was closed by interrupted silkworm-gut sutures. Owing to the distension great difficulty was experienced in getting the abdominal walls to meet over the bowels. Iodoform dressings were applied.

After-treatment.—A copious enema given after operation proved very effective in relieving thirst. Nutrition was kept up for five days by enemata. Then feeding by mouth was cautiously commenced, water being given first, then animal extracts, and then milk. The gauze drain was removed on the fifth day, and the stitches on the fourteenth day. The track in which the gauze drain lay healed by granulations, the rest of the wound by immediate union. On the third day the pulse slowed down remarkably, and remained for twelve hours under sixty in the minute.

Remarks.—The abdomen was not flushed out because we thought the stomach contents had not spread far beyond the gastric region, and we feared that flushing might only disseminate them still further. Therefore sponging and drainage were relied on. Previous to closing the abdomen the cavity of the small sac was inspected through an opening torn in the omentum near the lower border of the stomach. It was found to be uncontaminated, showing that the posterior wall of the stomach was intact. The progress after operation was in every way excellent. Both pulse and temperature at once fell, and remained down throughout the period of convalescence. The patient is now well, and has been free from pain since the operation. Much credit is due to Dr. O'Hara for his promptness in recognising the nature of the illness, and in at once advising operation.

DR. CRAIG thought Dr. Campbell very fortunate in having secured such a case, as all cases were not suitable for operation. He thought the operation could be undertaken only when the ulcer was still acute, was situated on the anterior wall of stomach, and where firm adhesions had not already formed. When on the posterior wall adhesions would probably have formed, and the patient die from hæmorrhage, localised abscess, or other causes; also, an ulcer on the anterior wall was easily reached. The result in this case had removed from his mind the great gravity of recommending laparotomy in cases of perforating gastric ulcer. In this case the position of the ulcer exactly coincided with where an ulcer most amenable to treatment should be. It was evidently a recent or acute ulcer, and the existing cicatricial tissue evidently the result of the old ulceration which had existed twenty years before, or at later periods.

MR. MYLES related the case of a servant maid suddenly taken ill, Perforation was easily diagnosticated, and patient was exceedingly collapsed. Consent to be operated on was not obtained till the fourth day, when an immense collection of pus was distinguished on opening abdomen; the surface of stomach was covered with lymph, and adhesions had formed everywhere. It was impossible to determine the actual point of puncture. The abscess cavity was drained. Death followed. In a second case, on which he operated six hours after perforation, the abdomen was found full of blood.

Patient had had symptoms of collapse, constant pain, and vomiting blood. The perforation was easily found and sutured, but, unfortunately, the girl died after leaving theatre. In a third case perforation was found on posterior wall. It was impossible to drain the cavity owing to the situation. Death followed some weeks after operation. The operation of suturing a perforating ulcer on anterior wall of stomach was not, in his opinion, very difficult, provided proper access to stomach could be obtained. He thought that in future he would enlarge the ordinary vertical incision by an oblique incision, as the increased facility of operation would more than counterbalance the disadvantages of liability to ventral hernia and greater shock. He saw the case of a child where perforating gastric ulcer was diagnosticated. Operation was not allowed, and the boy was perfectly well in two days. The diagnosis was, therefore, not so easy.

Mr. Frazer gave a case where perforation occurred at back of upper curvature. Death in ten days. Position of ulcer found at *post-mortem*. He did not see how it could have been easily reached by operation. He gave two other cases which recovered under medical treatment, but death took place at distant intervals by both ulcerations giving way. In one of these cases the patient, a woman, ate a hearty meal, including peas. Symptoms of perforation were present, and after death some peas were found in her pelvis. He had seen a case of typhoid fever where perforation undoubtedly occurred, but recovery took place.

Mr. R. G. Patteson said that in the majority of these cases the patient was not seen in the acute stage, or when perforation was recent. The patients were generally seen when several attacks of inflammation had caused adhesions, abscesses had formed outside the stomach, and a fatal result was brought about by perforation of the sac of the secondary abscess cavity. He gave a case where such had occurred. Whether the ulcer was acute or chronic was important. In cases which he had examined *post mortem* he found that in the area surrounding the ulcer there was a considerable amount of induration, where the gastric wall was enormously thickened, where any attempt at inversion of the wall to close the ulcer, or suture of any kind, would be difficult without invaginating a considerable area of stomach wall. If one had to excise a large indurated area probably cicatricial tissue would not unite in the same way as healthy mucous membrane. Every moment of delay added to the gravity of the operation. Perforations due to perforative peritonitis in typhoid fever could not be classed with such cases, as the ulceration is generally multiple, and although one perforation might be closed by operation, there was no guarantee that there were not other points about to rupture. It was much more difficult to close the stomach wall in a state of induration due to chronic inflammation than to close the intestinal wall.

Mr. Henry Gray Croly said that such a case as Mr. Campbell's some years ago would have been placed under the physician and treated expectantly. The case showed that the sooner laparotomy is done the better.

Dr. A. J. Smith had seen two cases of perforating gastric ulcer. The first case, that of a young girl, had been on dietetic treatment in a hospital. One day she was seized with a sudden pain in the abdomen while in a tram, and was brought to St. Vincent's Hospital, and placed under the care of Mr. Tobin. When admitted she was partly collapsed, and had a peculiar cyanosed condition of face, collapsed pulse, and slow respiration. On palpation a dull area over anterior surface of stomach was found. The abdomen was opened the following morning, and milk and bread came from it. Adhesions were present. Plugged with iodoform gauze, and patient recovered. The second case was that of a woman brought to hospital with sudden pain in abdomen and collapse. Cyanosis present, but no dull area detected in epigastrium. There was absence of liver dulness. Death ensued. *Post-mortem* showed abdominal cavity full of a hearty meal. He could hardly conceive how one could treat a case when the stomach was full and the contents spill over the abdominal cavity. He believed that when rupture occurred on anterior wall, and when stomach was empty, surgical treatment was of avail, but not otherwise.

Mr. Lentaigne asked if there was any modification of liver dulness in Mr. Campbell's case? He had two cases recently under his care, in both of which there was absence of liver dulness. In the first case operation was not allowed, and patient died in two or three days. *Post-mortem* showed a gastric ulcer on anterior wall of stomach. The symptoms of the second case were similar, and at request of patient, though against wishes of parents, the abdomen was opened. However, the perforation could not be found, and was not certainly on anterior wall. He introduced a gauze drain, and endeavoured to give relief. Patient died in a week. *Post-mortem* showed a perforation on posterior wall, and quite inaccessible.

Mr. John Campbell, in reply, said that although the anterior wall is by far the most favourable situation, still it was possible to deal successfully with a rupture on posterior wall at times, as is proved by a late successful case under Dr. Walton Brown, of Belfast. Regarding likelihood of success, his own case was fortunate in respect to the amount of extravasation, which, he thought, had more to do with success than anything else. The more extravasation, the less chance of success. Probably it was not worth while to operate later than twenty-four hours after perforation. With reference to flushing *versus* sponging the abdominal cavity, he was in favour of the latter, as it was easier for the patient, and flushing often diluted and disseminated the material through the cavity. He was against operating in perforation from typhoid ulcers, as the patient was not able to bear a laparotomy. In answer to Dr. Lentaigne, he said that liver dulness was present three hours after perforation, but had disappeared fourteen hours after perforation.

On Hæmorrhage as a Complication of Internal Urethrotomy.

MR. T. MYLES read a paper on this subject.

The PRESIDENT was not satisfied with Mr. Myles's explanation of the bleeding, because if produced by the knife passing deeply into the mucous membrane, hæmorrhage ought to follow the internal division of all tight strictures. He himself had only had one case of severe hæmorrhage after internal urethrotomy. Lately, in cases of tight strictures, he had performed internal urethrotomy, combined at once with a perineal section. By this means hæmorrhage, if it occurred, could be dealt with immediately. He was against the use of iron solution in connection with a wound in the urinary tract.

MR. CROLY said that nothing would induce him to perform Maisonneuve's operation. He used Symes' and Wheelhouse's methods, and never lost a case of external urethrotomy. He had never seen troublesome hæmorrhage. External urethrotomy for a bad stricture, if the kidneys were sound, was a most successful procedure. If hæmorrhage did occur after external urethrotomy it was easily controlled.

MR. LENTAIGNE had had one case in which severe hæmorrhage occurred after the operation of internal urethrotomy. Passage of a large sound by the house surgeon had no effect—in fact, it seemed to increase the hæmorrhage. When Mr. Lentaigne saw the case very soon after the bleeding had commenced, the blood was still coming out in jets, but stopped immediately when he withdrew the catheter. On one occasion the filiform bougie broke off close to the director in the urethra, but was extracted by Wheelhouse's operation. In a case of hæmorrhage after internal urethrotomy he would dilate the rectum with an india-rubber bag used in suprapubic lithotomy, and then bandage firmly the perineum. If this failed he would resort to external urethrotomy. He gave a case where the urethra was slit up owing to the blade having been sharpened on the top in mistake by a cutler, resulting in great hæmorrhage, but ultimate recovery. He spoke very strongly in favour of Maisonneuve's operation.

DR. T. E. GORDON said that there was a great difference between deep strictures and anterior strictures. Mr. Myles had condemned the operation in deep strictures, but had not included anterior strictures. The other day he had a patient on whom a No. 1 catheter could not be passed, but Maisonneuve's filiform bougie was passed, and over it Maisonneuve's silver catheter, and subsequently larger and larger instruments were passed till a No. 7 was reached. The stricture was three inches from meatus. On leaving the patient alone the stricture went back to its original size. Internal urethrotomy relieved the man's condition immediately. Such cases were suitable for internal urethrotomy, but not by Maisonneuve's instrument, which only cut the roof of urethra. Such an instrument as Civiale's he thought was better.

DR. G. J. JOHNSTON thought Maisonneuve's operation irrational. He thought that the principle of the operation was to cut the roof of urethra, and leave the stricture alone. He objected to the injection of styptics into the urethra, and if the hæmorrhage could not be stopped by pressure, external urethrotomy was the only resource. He advocated internal, combined with external, urethrotomy for deep strictures.

DR. R. LANE-JOYNT did not agree with Mr. Lentaigne in the method which the latter would adopt to control hæmorrhage following internal urethrotomy. Pressure in the perineum would stop hæmorrhage only if the triangular ligament was destroyed.

MR. E. H. BENNETT raised an objection to the assumption that strictures were present on the floor and absent on the roof of urethra.

SUR.-GENERAL POTTER made a few remarks.

MR. MYLES, in reply to Mr. Bennett, said that he had not intended to convey that strictures were present altogether on floor of urethra. They were sometimes present on the roof, but in the large percentage of cases on the floor, because the antecedent ulcer is on the floor. For years there had been probably no greater advocate for Maisonneuve's operation than himself. It was the only instrument capable of dividing a stricture along the entire length of urethra. He did not agree with Mr. Lentaigne regarding the rectal pressure. If the rectum was inflated with a bag, and the venous flow back from the prostatic plexus obstructed, the hæmorrhage was increased. The operation of perineal section without a guide was difficult if the urethra was empty; it was not if the urethra was full.

The Section then adjourned.

SECTION OF MEDICINE.

President—Sir George F. Duffey, M.D., President of the Royal College of Physicians of Ireland.

Sectional Secretary—Dr. R. Travers Smith.

Friday, May 20, 1898.

The President in the Chair.

A Case of Slow Cardiac Action.

The **Secretary**. for **Dr. R. J. Kinkead** (Galway), read a paper on this subject. [It will be found at p. 4].

The **President** said that decrease in rate is due to a great many causes, either certain heart diseases or certain nervous influences, such as compression of the nucleus of the accelerator nerve of the heart. The condition was sometimes paroxysmal, a pure neurosis, without any apparent cause. What was the object of giving atropin?

A Case of Membranous Colitis.

Dr. W. R. Dawson read notes on a case of this disease. A gentleman, about forty-two years of age, some three years ago became subject to habitual constipation, which has since persisted. About a year later he began to observe shreds and patches of membrane in the fæces, and these appearances have been present ever since, but with aggravations at intervals of two or three months. At such times pieces of membrane came away in rather large quantities, mostly after the fæces, and there are some dyspeptic symptoms also, but no pain in defæcation, or on abdominal pressure. There is little or no general discomfort, and the patient's health, spirits, and nutrition are excellent. The membranes are of varying size, and appear to consist entirely of mucus, embedding large numbers of degenerated cells, mostly epithelial. The treatment is purely general, the bowels being kept open by enemata rather than purgatives, and there has been, on the whole, some improvement.

Dr. Wallace Beatty had met with a somewhat similar case. Patient was a policeman, in good health, except that he was continually passing large quantities of membranous material from the bowels, associated with very obstinate constipation. Patient was twenty-seven years of age, and had been under observation for many years. All kinds of remedies were tried without benefit. He was then placed on milk diet and cod-liver oil, and he still continues the diet, and is doing very well and able to continue his work, and passes very little membrane. Such cases, he thought, were very intractable, and prolonged unirritating diet was the best treatment.

The **President** thought that in Dr. Dawson's case the shreds of membrane consisted of mucin, and so, perhaps, mucous-colitis would be a better name, as it contained no fibrin. The pathology of this condition would appear to be a follicular catarrh of portion of the mucous membrane of the intestine. It was difficult to know the cause. It may have been connected with the habitual constipation. Some considered the disease a neurosis; some observers think that the best treatment is to look after the hygienic condition of the patient. Very large enemata were useful; perhaps a quart or more of water, with 15 to 20 minims of dilute nitric acid, and this quantity of acid increased. Did Dr. Dawson try that? Did he find the glycerine enemata more efficacious than plain aqueous enemata?

Dr. Doyle related the case of a man who, when he saw him first, complained of a very viscid condition of the fæcal matter and a quantity of mucous shreds which he passed. Patient had been subject to great mental worry; he suffered much from constipation. Examination showed the fæcal matter to accumulate in the sigmoid flexure. Death occurred in a year. *Post-mortem* showed a non-malignant hard band causing a stricture. The proximal end of the gut, just above the stricture, had given way, and below the stricture there was scarcely any inflammatory condition, while all above there was an inflammation of the colon. Enemata had been found very useful in this case. He related another case, that of a girl, who came under his observation six weeks ago. There was a stricture high up in the rectum close to the sigmoid flexure. Mucus was continually being passed per anum. There were large accumulations in the cæcum and sigmoid flexure. At first he could not pass his finger through the stricture, but could do so now. The collections of fæces have now disappeared, and patient has a good evacuation of the bowels.

Dr. Dawson, in reply, said he was much interested in Dr.

Beatty's case especially regarding the milk diet. In his own case diet seemed to have no relation at all, as the patient rather watched his diet, and took some things experimentally, and found plum pudding quite innocuous. Regarding the name of the disease, he thought that no satisfactory name had yet been fixed, but, as a matter of fact, a certain number of cases have been described in which there was a very large amount of fibrin in the membranes, although the case did not differ much otherwise, so that the objection to the term membranous would not hold in all cases. The connection of the disease with the nervous system was very interesting, as it did occur in nervous people. His own patient was rather a typical subject. Acid enemata had not been tried, but the ordinary warm water is used alternately with the glycerine enemata, and the latter work best when they act at all. Dr. Doyle's case showed the power of accumulation of fæces to produce this condition.

A Case of Dissecting Aneurysm.

Dr. J. B. Coleman read the notes of a case of this disease. [It will be found at p. 125].

Dr. Finny said that Shekelton's aneurysm was a modification of dissecting aneurysm, and was not necessarily the first sort of dissecting aneurysm described. There were two forms—one in which the blood bursts externally (the original kind); and the other form, Shekelton's aneurysm, in which the blood, after having travelled a certain distance down, re-enters the original channel. He related a case of aneurysm of the abdominal aorta which he had treated. Two years later patient's health failed, and he died. Autopsy showed that it was a case of Shekelton's dissecting aneurysm, beginning high up and dividing the coats of the artery practically into two layers, and ending at the external iliac arteries. From the anterior half of the dissection had sprung the aneurysm which he had treated. There was a secondary aneurysm in one of the branches of the arteries forming the cœliac axis. The larger branches going to the kidneys were all coming from the anterior part of the vessel, while the lumbar arteries were coming from the renal part of the vessel. In Dr. Coleman's case he presumed that the sudden pain with which the patient was attacked while on the ladder showed the dissection going down, the blood forcing its way, and probably blocking some of the vessels going to the spinal cord and the lumbar arteries.

Dr. Knott said that three varieties of dissecting aneurysm had been described—one where the blood went between the coats of the vessels and found its way out at some distance, and became a false aneurysm; a second, and more typical form, is where the blood has tunnelled its way between the coats of the artery, and found its way to the artery again; a third variety is where the blood travelled for some distance between the coats, and does not go in or out.

Dr. Coleman, in reply, said that he was aware that Shekelton's aneurysm, as described by Shekelton himself, was a chronic aneurysm, but he had understood that the term Shekelton's aneurysm was improperly applied to dissecting aneurysm in general.

Brief Notes on—(a) Pericarditis, (b) Urobilin Icterus.

Dr. A. R. Parsons read notes of cases of these diseases.

Dr. Wallace Beatty asked what was the colour of the fæces in the second case.

The President asked to what did Dr. Parsons attribute the benefit of oxygen in the treatment of the first case.

Dr. Doyle asked if the urine had been examined in the first case prior to the administration of opium. What was the quantity of opium used? He did not think that poulticing would be of much benefit where there was such a dyspnœa. Were there any tube casts or micrococci found in the urine?

The President, in referring to the cases of icterus in children, asked if Dr. Parsons referred to the condition of congenital jaundice which was so fatal, and so often occurred in members of the same family.

Dr. Parsons, in reply to Dr. Beatty, said that, in the case of urobilin icterus, the colour of fæces was light yellow. In the third case the colour was brown. He had no recollection what the colour was in the second case. With regard to the inhalation of oxygen, which greatly relieved the dyspnœa, the man's respirations were up to forty-two before administering it, and they dropped down to thirty, and later to twenty and eighteen. The icterus in children to which he had referred was a mild form seen in babies one to three days after birth, and he did not refer to the kind mentioned by the President, or to icterus gravis. With regard to Dr. Doyle's question, the urine presented no abnormal features. It was not tested for micro-organisms. Liquor morphinæ hydrochlor. (40 minim doses) and liquor opii sedativus (20 minim doses) had been used. With regard to the treatment of cardiac affections, poultices had, at all events, the effect of alleviating pain, and it was for the purpose of trying to alleviate the acute pain that he ordered them. The great objection to the line of treatment was the expense. The patient consumed about £15 worth of oxygen during the seven days.

The Section then adjourned.

SECTION OF OBSTETRICS.

President—F. W. Kidd, M.D.

Sectional Secretary—J. H. Glenn, M.D.

Friday, May 27, 1898.

The President in the Chair.

Ovarian Cyst.

Dr. Alfred Smith showed an ovarian tumour. The after-history of the case presented many points of interest. It was removed on May 4th from a young married woman, who had given birth to a child five months previously. Temperature on admission, 102° F.; pulse, 120. There was enormous distension from free ascites. Abdominal section revealed extensive peritonitis. About thirty hours after operation the patient got a marked change for the worse. The abdomen became distended; vomiting set in. Four grains of calomel, followed by a seidlitz powder, failed to act upon the bowels. Two large enemata were also tried. Pulse became extremely weak (140); the patient's appearance cyanosed and anxious. Abdomen re-opened. Small intestines not distended, but cæcum was found greatly blown out, dark in colour, without lustre. It was strangulated by a broad band. The band was cut through, and slight taxis applied to distended cæcum. The contents regurgitated into ileum. Cæcum was then brought out of abdomen, and artificial anus formed. The abdominal incision was left open to the extent of three or four inches, and a large gauze drain put in for twenty-four hours. Patient is now, three weeks after operation, doing well. It will be necessary to do an intestinal anastomosis later on.

Dr. E. Tweedy asked if the tumour could be felt by rectal or by combined rectal and vaginal examination? Why was it necessary to perform a colotomy after having broken the constricting bands?

Dr. A. Smith, replying, said that the distension was such that a positive diagnosis could not be made. There was no distension of the posterior *cul-de-sac.* After ligaturing and cutting the bands of adhesions round the colon, he tried taxis to see if the contents would move in the usual direction, but regurgitation took place towards the ileum. He, therefore, performed colotomy.

Specimens.

The **President.**—Uterus removed for carcinoma of body by vaginal hysterectomy.

Dr. Glenn.—Cystoma ovarii. Special reference being made to the use of formalin in the preparation of the abdomen before operation.

Clinical Report of the Rotunda Gynæcological Hospital for 1896–7.

The **Master** (Dr. R. D. Purefoy) read this Report. [It will be found at pp. 97 and 169].

Dr. Alfred Smith, referring to the preliminary preparation of patients for abdominal section, thought that the general principles laid down in the Report of the Rotunda were retained in most hospitals. Formalin might be of assistance in some cases. Pus occurring in suture cracks was, he thought, due to the condition of suture employed. He believed in suturing the abdominal wall in its entirety. In trachelorrhaphy why were silk sutures left in the cervix for twenty-one days? With relation to finger *versus* curette in abortions, he always used the latter before the formation of the placenta, but when the placenta was formed he used the finger. He made this distinction owing to the condition of the uterine muscle. Referring to the heading "Sub-involution," it used to be taught in the Rotunda that a hæmorrhage on the ninth day was an ordinary secondary hæmorrhage, and the condition was described as an essentially puerperal condition. When to operate in a case of fibro-myoma was a burning question. Was it true that all cases after forty-five years are small and withering away? He lately had some cases return to him—cases which he had said would get all right after forty-five years, but these cases were now so bad as to make him hesitate to operate. Once myoma was recognised in the uterus he was in favour of early operation. He did not think panhysterectomy suitable for such cases, as the mortality was extremely high. The age of the patient was important. The deaths occurred in old people practically. He did not think "shock" a sufficient cause for death, as stated in the Report.

Dr. E. Tweedy preferred the use of the finger to the curette in abortions. He had never tried formalin on the abdomen, as it was very irritating and very volatile. Did Dr. Glenn cover it with gutta-percha tissue? What did Dr. Purefoy consider as "recent adhesions?" He thought it a difficult question when to attempt to break down recent adhesions, as there was a possibility of disseminating some septic matter. Sub-involution was mentioned in every text-book. Modern authorities had given up talking about sub-involution, as they had begun to think there was no such thing. The symptoms, too, regarding sub-involution, were now associated with metritis and endo-metritis, and were due to a hyperplasia of the connective tissue of the uterus. According to the Report, cystitis seemed to be very incurable. He agreed, and especially was it incurable because it was generally associated with enlarged tubes, pyosalpinx, or involvement of the kidneys. He thought that "paralysis of the bowel" would hardly cause death unless there was something complicating it. Was any stricture of the bowel found on *post-mortem*?

Dr. J. H. Glenn did not agree with Dr. Smith in saying that pus occurring in an abdominal wound was always due to some fault in the preparation of the suture material. It was the lowest suture only that very often had pus. There was a tendency of the binder to "ruck up" and the dressing to become displaced upwards, allowing infective material to come in contact with the lower portion of the wound. He believed that, in closing the abdominal wall, bringing the aponeurosis together with properly sterilised cat-gut, was much better than suturing *en bloc*, and prevented ventral hernia occurring, as here there was a double protection, for when the patient contracted the recti muscles there was a tendency for these to gape apart. He had always been an advocate for the use, not the abuse, of the curette. It was no argument to say that one might go too deeply. The curette could be sterilised; but not the finger. He had never found patients complain of irritation from 2 per cent. solution of formalin. He covered it with protective usually. Regarding the breaking down of adhesions by Schultze's method, what would Dr. Purefoy do in a case where he had to decide between doing a posterior colpotomy and breaking down the adhesions, or doing an abdominal section and hysteropexy? Why was lysol given up for washing the hands before an abdominal section?

Dr. Knott had seen a case of cystitis cured by establishing artificially a vesico-vaginal fistula. The fistula was subsequently closed.

The President said that myomatous and fibromatous tumours should not be classified together. Fibromatous tumours were more likely to disappear after establishment of the menopause. A myomatous tumour was much more involved as part of the uterus itself, and the whole uterus was generally enlarged. With regard to a rule that one should operate on all these tumours, that would be impossible, as they were met with in enormous numbers of cases which often gave rise to no symptoms. After completion of an abdominal wound, he placed iodoform gauze along the incision, and kept it in close contact with the wound by stripes of adhesive plaster, and there was no possibility of "rucking up." It also sustained the abdominal walls and aided the skin to regain its elasticity if vomiting occurred.

Dr. R. D. Purefoy, in reply, said he did not attribute the occurrence of stitch abcess always to faulty preparation of the sutures. He could not account for it in some cases. After trachelorrhaphy the patient was allowed up some days before removal of the stitches in 21 days. He thought that the word "shock," as synonymous with heart failure, had been properly used as the cause of death in panhysterectomy. Cases of adhesions were very difficult to treat, and he believed that a very small proportion of them is finally relieved. If a patient gave a history of recent localised pain following traumatism or exposure to cold, the adhesions might be considered recent. He had found cystitis most troublesome to treat, and there was often organic disease of the kidneys in old standing cases. In the case which died from paralysis of the bowel, there had been great difficulty in completing the operation. Some coils of intestine escaped from time to time at the edge of wound, and he thought that perhaps some of them were pressed upon a good deal. All efforts to cause action of the bowels failed. When suturing a very thick abdominal wall he stitched the peritoneum separately, taking in the edge of the aponeurosis with it. He had found lysol very irritating to the hands. For removal of urethral caruncle, when there was time, he preferred to apply cocaïn, and then nitric acid. It required to be repeated a few times.

The Section then adjourned to next Session.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—D. J. Coffey, M.B.

Sectional Secretary—A. Birmingham, M.D.

Friday, June 3, 1898.

The President in the Chair.

Exhibits.

Dr. R. J. Montgomery exhibited a child, aged about eleven years, in whom both crystalline lenses were dislocated upwards and outwards. The displaced structures and the amount of their displacement were easily seen with the aid of a simple lens. The only noticeable effect on the vision of the patient was an inability to see small structures clearly.

Professor Fraser showed a number of interesting embryological specimens, exhibiting certain phases in the development of the central nervous system, the kidney, &c.

Professor Birmingham exhibited (*a*) a specimen illustrating the course of the left phrenic nerve in the upper part of the thorax, which he thought showed the true position of the nerve at a part of its course which is generally neglected in our descriptions; and (*b*) dissections of the apical gland of Blandin.

Account of an Unusual Course of the Phrenic Nerve.

Dr. J. Barton read a short note on an irregular phrenic nerve. The nerve came off from the 4th cervical, and ran for an inch and a half in the trunk formed by the 5th and 6th nerves, getting a branch from the 5th. It then passed downwards and inwards in contact with the posterior surface of the sterno-mastoid, crossed the subclavian vein opposite the insertion of the scalenus anticus, and entered the thorax in front of internal mammary artery and right innominate vein, and then passed down by the cava and pericardium as usual. He also referred to the frequency with which the phrenic nerve passed behind instead of in front of the internal mammary artery.

Professor Birmingham suggested that the phrenic had perhaps associated itself with the nerve to the subclavius for some distance in this specimen.

Professor Fraser remarked on the various courses which might be taken by certain fibres on their way from the spinal cord. He had seen Dr. Barton's specimen when undergoing dissection, and he had thought of the explanation suggested by Professor Birmingham, which was not applicable in this case, as the abnormal phrenic lay too far in.

Dr. Barton had failed to find the nerve to the subclavius, as the dissection had gone on some way when his attention was called to it. The course did not agree at all with that of the nerve to the subclavius.

A Note on the Muscular Fibres of the Œsophagus.

Professor Birmingham read a paper on this subject in which he pointed out (supporting his views by several specimens) that the usual description which made the longitudinal fibresof the œsophagus divide above into three bands, two of which were said to be attached to the inferior constrictor and a third to the ridge of the cricoid, was inaccurate. He showed that these longitudinal fibres formed two chief bands above, which were first placed laterally and then wound round to the front, where, meeting, they passed into a tendinous band one-fourth of an inch wide, and this was attached to the top of the back of the cricoid at the upper end of its ridge. He also explained in detail the arrangement of the muscular fibres at the upper end of the tube, and showed the part played by the inferior constrictor in uniting the pharynx and œsophagus.

A Note on the Arrangement of the Muscular Fibres of the Stomach.

Professor Birmingham also read a communication on the above. He agreed with the usual description of the longitudinal fibres. With the description of the circular fibres found in all our text-books he could not agree. These fibres were described as forming rings round the organ from the fundus to the pylorus. This is inaccurate. The fibres which form rings round the fundus and the adjacent part of the stomach to the left of the œsophagus, belong to the deepest or oblique layer of the muscular coat. The detailed arrangement of the oblique fibres was given, and the connection of the three layers with the fibres of the œsophagus and the points brought out were illustrated by dissections of stomachs in which the muscular fibres were well developed.

Professor Fraser referred to the tendency exhibited by different observers to work out various patterns in the arrangement of the muscular fibres of organs. He remembered when Dr. Pettigrew showed figure of 8 arrangements first in the heart and then tried to make them out in the other viscera. He had not made special dissections of the fibres in the stomach, but he had, he thought, seen the three longitudinal bands described at the upper end of the œsophagus.

Professor Birmingham, in reply, said that he had made a considerable number of dissections of the œsophagus with the greatest care, and in none of them had he found three bands present.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, October 8, 1898.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Average Rate for 4 weeks	Towns	Weeks ending				Average Rate for 4 weeks
	Sept. 17	Sept. 24	Oct. 1	Oct. 8			Sept. 17	Sept. 24	Oct. 1	Oct. 8	
23 Town Districts	26·8	25·0	24·4	23·9	25·0	Limerick -	23·9	23·9	32·3	12·6	23·2
Armagh -	21·4	14·3	14·3	14·3	16·1	Lisburn -	17·0	8·5	8·5	17·0	12·8
Ballymena	56·4	16·9	22·5	11·3	26·8	Londonderry	28·3	18·8	25·1	17·3	22·4
Belfast -	30·6	28·9	23·5	30·1	28·3	Lurgan -	18·2	36·5	13·7	36·5	26·2
Carrickfergus	11·7	11·7	5·8	5·8	8·8	Newry -	12·1	4·0	12·1	16·1	11·1
Clonmel -	34·1	24·3	34·1	19·5	28·0	Newtownards	17·0	39·7	22·7	34·0	28·3
Cork -	25·6	27·0	27·7	22·8	25·8	Portadown -	6·2	6·2	12·4	24·7	12·4
Drogheda -	30·4	0·0	26·6	11·4	17·1	Queenstown	5·7	17·2	11·5	17·2	12·9
Dublin -	26·5	25·8	23·9	22·4	24·6	Sligo -	20·3	10·2	35·5	60·9	31·7
Dundalk -	25·1	0·0	29·3	12·6	16·8	Tralee -	11·2	22·4	78·3	16·8	32·2
Galway -	30·2	11·3	49·1	15·1	26·4	Waterford -	23·9	31·8	17·9	23·9	24·4
Kilkenny -	18·9	23·6	14·2	9·4	16·5	Wexford -	31·6	40·6	22·6	27·1	30·5

In the week ending Saturday, September 17, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 21·2), was equal to an average annual death-rate of 24·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·8 per 1,000. In Glasgow the rate was 19·8. In Edinburgh it was 16·4.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 26·8 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 7·3 per 1,000, the rates varying from 0·0 in nine of the districts to 12·6 in Londonderry—the 18 deaths from all causes registered in that district comprising 8 from diarrhœa. Among the 179 deaths from all causes registered in Belfast are 4 from whooping-cough, 2 from diphtheria, 39 from enteric fever, and 26 from diarrhœa. The 37 deaths in Cork comprise 12 from diarrhœa. The 17 deaths in Limerick comprise 2 from whooping-cough, one from enteric fever, and one from diarrhœa.

In the Dublin Registration District the registered births amounted to 247—135 boys and 112 girls; and the registered deaths to 182—94 males and 88 females.

The deaths, which are 29 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·1 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 26·5 per 1,000. During the thirty-seven weeks of the current year ending with Saturday, September 17, the death-rate averaged 26·8, and was 0·4 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 40, being 13 over the average for the corresponding week of the last ten years, but 19 under the number for the previous week. The 40 deaths comprise one from measles, 4 from whooping-cough, one from diphtheria, 3 from enteric fever, 2 from cholera infantum, and 26 from diarrhœa. Twenty-five of the 26 deaths from diarrhœa were of children under 5 years of age, 17 being deaths of infants under one year old.

The number of cases of scarlatina admitted to hospital was 18, being 2 under the admissions in the preceding week. Eight scarlatina patients were discharged and 85 remained under treatment on Saturday, being 10 over the number in hospital on Saturday, September 10. There were also 23 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The number of enteric fever cases admitted to hospital, which had fallen from 53 in the week ended September 3 to 43 in the following week, further declined to 37. Twenty-six patients were discharged, one died, and 167 remained under treatment on Saturday, being 10 over the number in hospital at the close of the preceding week.

The hospital admissions included, also, 2 cases of diphtheria; 9 cases of this disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 18 in the week ended September 3 to 27 in the following week, fell to 17, but this number is equal to the average for the corresponding week of the last ten years. The 17 deaths comprise 9 from bronchitis and 7 from pneumonia.

In the week ending Saturday, September 24, the mortality in thirty-three large English towns, including London (in which the rate was 21·6), was equal to an average annual death-rate of 23·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·7 per 1,000. In Glasgow the rate was 21·4, and in Edinburgh it was 20·1.

The average annual death-rate in the twenty-three principal town districts of Ireland was 25·0 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 6·4 per 1,000, the rates varying from 0·0 in eleven of the districts to 22·7 in Newtownards—the 7 deaths from all causes registered in that district comprising one from diphtheria and 3 from diarrhœa. Among the 169 deaths from all causes in Belfast are 2 from measles, one from scarlatina, 3 from whooping-cough, 2 from simple continued and ill-defined fever, 31 from enteric fever, and 19 from diarrhœa. The 39 deaths in Cork comprise one from whooping-cough and 8 from diarrhœa. Of the 17 deaths in Limerick 2 were from measles and one from whooping-cough. The 12 deaths in Londonderry comprise one from ill-defined fever and 6 from diarrhœa. Among the 16 deaths in Waterford are 2 from diarrhœa. Of the 8 deaths in Lurgan 2 were from diarrhœa. The 5 deaths in Clonmel comprise 4 from diarrhœa and cholera infantum.

In the Dublin Registration District the registered births amounted to 194—90 boys and 104 girls; and the registered deaths to 181—92 males and 89 females.

The deaths, which are 26 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·0 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 25·8 per 1,000. During the thirty-eight weeks ending with Saturday, September 24, the death-rate averaged 26·8, and was 0·3 under the mean rate in the corresponding period of the ten years 1888–1897.

Forty-three deaths from zymotic diseases were registered, being 3 over the number for the preceding week and 14 in excess of the average for the 38th week of the last ten years. They comprise one from measles, one from scarlet fever (scarlatina), one from typhus, 2 from influenza and its complications, 4 from whooping-cough, 5 from enteric fever, 7 from simple cholera and choleraic diarrhœa, 20 from diarrhœa—being 6 over the average number from that cause in the corresponding week of the last ten years, but 6 under the number for the previous week—and one from erysipelas. All of the 20 deaths from diarrhœa and 6 out of the 7 deaths from simple cholera and choleraic diarrhœa occurred among children under 5 years of age, 19 being deaths of infants under one year old.

Twenty-two cases of scarlatina were admitted to hospital, being 4 over the admissions in the preceding week: 18 scarlatina patients were discharged, one died, and 88 remained under treatment on Saturday, being 3 over the number in hospital on that day week. There were also 20 convalescents under treatment at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 37, being equal to the admissions in the preceding week. Thirty-five patients were discharged, one died, and 168 remained under treatment on Saturday, being one over the number in hospital at the close of the preceding week.

The hospital admissions included, also, 4 cases of diphtheria: 12 cases of the disease remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system was 16, being one under the average for the corresponding week of the last ten years, and also one under the number for the previous week. The 16 deaths consist of 9 from bronchitis, 6 from pneumonia, and one from pleurisy.

In the week ending Saturday, October 1, the mortality in thirty-three large English towns, including London (in which the rate was 19·7), was equal to an average annual death-rate of 21·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·1 per 1,000. In Glasgow the rate was 17·6, and in Edinburgh it was 18·1.

The average annual death-rate in the twenty-three principal town districts of Ireland was 24·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 6·5 per 1,000, the rates varying from 0·0 in seven of the districts to 16·8 in Tralee—the 14 deaths from all causes registered in that district comprising 2 from typhus and one from diarrhœa. Among the 137 deaths from all causes registered in Belfast are one from measles, 8 from whooping-cough, 2 from diphtheria, one from simple continued fever, 17 from enteric fever, and 17 from diarrhœa. The 40 deaths in Cork comprise one from typhus, one from whooping-cough, one from enteric fever, and 8 from diarrhœa. Of the 23 deaths in Limerick 2 were from measles, one from whooping-cough, and 2 from diarrhœa. The 16 deaths in Londonderry comprise one from enteric fever and 6 from diarrhœa. Among the 9 deaths in Waterford are 3 from diarrhœa. Two of the 7 deaths in Clonmel were from diarrhœa. The 7 deaths in Sligo comprise 2 from measles and one from diarrhœa.

In the Dublin Registration District the registered births amounted to 230—120 boys and 110 girls; and the registered deaths to 165—82 males and 83 females.

The deaths, which are 6 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·6 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000. During the thirty-nine weeks ending with Saturday, October 1, the death-rate averaged 26·8, and was 0·2 under the mean rate in the corresponding period of the ten years 1888–1897.

Forty-four deaths from zymotic diseases were registered, being 18 above the average for the corresponding week of the last ten years. They comprise one from scarlet fever (scarlatina), one from typhus, one from influenza, 5 from whooping-cough, 4 from enteric fever, 2 from choleraic diarrhœa, 26 from diarrhœa—being 12 over the average number from that cause in the corresponding week of the last ten years, and 6 over the number for the previous week—one from dysentery, and one from erysipelas. Both of the deaths from choleraic diarrhœa and 23 of those from diarrhœa occurred among children under 5 years of age, 19 being infants under one year old.

The number of cases of scarlatina admitted to hospital was 13, being 9 under the admissions in the preceding week. Thirteen scarlatina patients were discharged, one died, and 87 remained under treatment on Saturday, being one under the number in hospital on that day week. This number does not include 20 convalescents at Beneavin, Glasnevin.

Forty cases of enteric fever were admitted to hospital, being 3 in excess of the admissions in each of the two weeks preceding. Thirty-one patients were discharged, 2 died, and 175 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week.

The hospital admissions included, also, 2 cases of typhus and 4 of measles. These were the only cases of these diseases in hospital on Saturday.

Twenty-two deaths from diseases of the respiratory system were registered, against 16 in the preceding week and an average of 18 for the 39th week of the last ten years. They comprise 11 from bronchitis and 8 from pneumonia.

In the week ending Saturday, October 8, the mortality in thirty-three large English towns, including London (in which the rate was 18·8), was equal to an average annual death-rate of 20·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·6 per 1,000. In Glasgow the rate was 20·2 per 1,000. In Edinburgh it was 19·9.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 23·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 4·8 per 1,000, the rates varying from 0·0 in ten of the districts to 13·7 in Lurgan—the 8 deaths from all causes registered in that district comprising 3 from diarrhœa. Among the 176 deaths from all causes registered in Belfast are one from scarlatina, 2 from whooping-cough, 4 from diphtheria, 25 from enteric fever, and 14 from diarrhœa. The 33 deaths in Cork comprise one from whooping-cough, one from enteric fever, and 6 from diarrhœa. Of the 9 deaths in Limerick 2 were from measles. Among the 11 deaths in Londonderry are 4 from diarrhœa. The 6 deaths in Wexford comprise 2 from whooping-cough. Both of the 2 deaths in Kilkenny were from diarrhœa, and the 4 deaths in Clonmel comprise 2 from this disease.

In the Dublin Registration District the registered births amounted to 167—96 boys and 71 girls; and the registered deaths to 155—72 males and 83 females.

The deaths, which are 6 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·1 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 22·4 per 1,000. During the forty weeks ending with Saturday, October 8, the death-rate averaged 26·7, and was 0·1 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 22, being 22 under the number for the preceding week and 3 below the average for the 40th week of the last ten years. The 22 deaths comprise 3 from whooping-cough, 2 from enteric fever, 14 from diarrhœa—being 3 over the average number of deaths from that cause in the corresponding week of the last ten years, but showing a decline of 12 as compared with the number for the previous week from choleraic diarrhœa. The last-mentioned death and 13 of the deaths from diarrhœa occurred among children under 5 years of age, 10 being deaths of infants under one year old.

The number of cases of scarlatina admitted to hospital further declined to 7. Eleven scarlatina patients were discharged, and 83 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week. There were, besides, 20 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 23, being 14 under the lowest weekly number of admissions for any of the previous 5 weeks and 17 under the number for the previous week. Thirty-one patients were discharged, and 167 remained under treatment on Saturday, being 8 under the number in hospital on that day week.

The hospital admissions included, also, 5 cases of diphtheria. Three diphtheria patients were discharged and 12 remained under treatment in hospital on Saturday.

Only 15 deaths from diseases of the respiratory system were registered, being 6 under the average for the corresponding week of the last ten years, and 7 under the number for the previous week. They comprise 8 from bronchitis and 6 from pneumonia.

VITAL STATISTICS

For four weeks ending Saturday, November 5, 1898.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Average Rate for 4 weeks	Towns	Weeks ending				Average Rate for 4 weeks
	Oct. 15	Oct. 22	Oct. 29	Nov. 5			Oct. 15	Oct. 22	Oct. 29	Nov. 5	
23 Town Districts	23·9	23·2	23·3	21·8	23·0	Limerick -	15·4	18·2	33·7	16·8	21·0
Armagh -	14·3	7·1	7·1	35·6	16·0	Lisburn -	21·3	17·0	8·5	8·5	13·8
Ballymena	5·6	5·6	16·9	11·3	9·9	Londonderry	33·0	17·3	9·4	15·7	18·9
Belfast -	27·9	24·6	23·6	26·2	25·6	Lurgan -	9·2	31·9	31·9	4·6	19·4
Carrickfergus	11·7	0·0	11·7	17·5	10·2	Newry -	12·1	4·0	28·2	24·1	17·1
Clonmel -	14·6	43·8	14·6	4·9	19·5	Newtownards	17·0	28·3	22·7	22·7	22·7
Cork -	26·3	24·9	19·4	18·7	22·3	Portadown	6·2	30·9	12·4	6·2	13·9
Drogheda -	15·2	19·0	11·4	11·4	14·3	Queenstown	5·7	17·2	28·7	11·5	15·8
Dublin -	24·8	25·5	26·3	23·6	25·0	Sligo -	25·4	25·4	30·5	20·3	25·4
Dundalk -	8·4	8·4	16·8	12·6	11·6	Tralee -	11·2	0·0	44·8	16·8	18·2
Galway -	18·9	11·3	7·6	26·4	16·1	Waterford	17·9	27·9	19·9	17·9	20·9
Kilkenny -	33·0	33·0	18·9	9·4	23·6	Wexford -	22·6	9·0	22·6	18·1	18·1

In the week ending Saturday, October 15, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 18·5), was equal to an average annual death-rate of 19·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·7 per 1,000. In Glasgow the rate was 22·6. In Edinburgh it was 20·4.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 23·9 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 4·1 per 1,000, the rates varying from 0·0 in thirteen of the districts to 14·2 in

Kilkenny—the 7 deaths from all causes registered in that district comprising one from whooping-cough and 2 from diarrhœa. Among the 163 deaths from all causes registered in Belfast are one from measles, one from scarlatina, 5 from whooping-cough, 4 from diphtheria, 18 from enteric fever, and 12 from diarrhœa. The 38 deaths in Cork comprise one from whooping-cough, one from enteric fever, and 2 from diarrhœa. Among the 21 deaths in Londonderry are one from whooping-cough and 3 from diarrhœa. Four of the 9 deaths in Waterford were from diarrhœa, and the 3 deaths in Clonmel comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 200—101 boys and 99 girls; and the registered deaths to 167—78 males and 89 females.

The deaths, which were 11 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·9 in every 1,000 of the population. Omitting the death of one person admitted to hospital from without the district, the rate was 24·8 per 1,000. During the forty-one weeks ending with Saturday, October 15, the death-rate averaged 26·6, and was 0·2 under the mean rate in the corresponding period of the ten years 1888–1897.

Deaths from zymotic diseases, which had fallen from 44 in the week ended October 1 to 22 in the following week, rose to 28, or 4 over the average for the corresponding week of the last ten years. They include one from measles, 2 from scarlet fever (scarlatina), 3 from influenza and its complications, one from whooping-cough, 3 from enteric fever, 11 from diarrhœa—being 3 under the number of deaths from that cause in the preceding week, but 2 over the average for the 41st week of the last ten years—and 3 from choleraic diarrhœa. All of the deaths from choleraic diarrhœa and 9 of the 11 deaths from diarrhœa occurred among infants under one year old.

The weekly number of cases of scarlatina admitted to hospital, which had fallen from 22 in the week ended September 24 to 13 in the following week and 7 in the week ended October 8, rose to 16. Five scarlatina patients were discharged during the week, one died, and 93 remained under treatment on Saturday, being 10 over the number in hospital at the close of the preceding week. Seventeen convalescents in addition were under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The number of cases of enteric fever admitted to hospital was 29, being 6 over the admissions in the preceding week, but 11 under the number for the week ended October 1. Fifteen patients were discharged, one died, and 180 remained under treatment on Saturday, being 13 over the number in hospital on the previous Saturday.

The hospital admissions included, also, 3 cases of diphtheria. Twelve cases of this disease remained under treatment in hospital on Saturday.

Twenty-two deaths from diseases of the respiratory system were registered, being 7 over the low number for the preceding week, and one in excess of the average for the 41st week of the last ten years. They comprise 14 from bronchitis and 7 from pneumonia.

In the week ending Saturday, October 22, the mortality in thirty-three large English towns, including London (in which the rate was 17·3), was equal to an average annual death-rate of 18·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·0 per 1,000. In Glasgow the rate was 20·3, and in Edinburgh it was 17·6.

The average annual death-rate in the twenty-three principal town districts of Ireland was 23·2 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 3·8 per 1,000, the rates varying from 0·0 in twelve of the districts to 9·4 in Kilkenny—the 7 deaths from all causes registered in that district comprising 2 from diarrhœa. Among the 144 deaths from all causes registered in Belfast are one from measles, one from scarlatina, 4 from whooping-cough, 5 from diphtheria, 17 from enteric fever, and 8 from diarrhœa. The 36 deaths in Cork comprise one from whooping-cough, one from enteric fever, and 2 from diarrhœa. The 13 deaths in Limerick comprise 2 from measles, 2 from whooping-cough, and one from diarrhœa.

In the Dublin Registration District the registered births amounted to 167—95 boys and 72 girls; and the registered deaths to 174—80 males and 94 females.

The deaths, which were 23 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·0 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 25·5 per 1,000. During the forty-two weeks ending with Saturday, October 22, the death-rate averaged 26·6, and was 0·1 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 27, being 5 over the average for the corresponding week of the last ten years, but one under the number for the previous week. The 27 deaths comprise one from scarlet fever (scarlatina), one from influenza, 7 from whooping-cough, 4 from enteric fever, 3 from choleraic diarrhœa, and 8 from diarrhœa. Twenty-two of the 27 deaths from zymotic diseases occurred among children under 5 years of age.

As in the week preceding, 16 cases of scarlatina were admitted to hospital. Eleven scarlatina patients were discharged, 2 died, and 96 remained under treatment on Saturday, being 3 over the number in hospital on that day week. There were, besides, 22 convalescents at Beneavin, Glasnevin.

Thirty-three cases of enteric fever were admitted to hospital, against 29 in the preceding week. Twenty-nine patients were discharged, and 184 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

The hospital admissions included, also, 5 cases of diphtheria, being 2 over the number of cases of the disease admitted during the previous week. Four patients were discharged, one died, and 12 remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system rose to 40, or 16 over the average for the corresponding week of the last ten years. The 40 deaths comprise 27 from bronchitis, 10 from pneumonia, and 2 from croup.

In the week ending Saturday, October 29, the mortality in thirty-three large English towns, including London (in which the rate was 16·3), was equal to an average annual death-rate of 17·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·0 per 1,000. In Glasgow the rate was 19·0, and in Edinburgh it was 18·5.

The average annual death-rate in the twenty-three principal town districts of Ireland was 23·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 3·1 per 1,000, the rates varying from 0·0 in ten of the districts to 22·4 in Tralee—the 8 deaths from all causes registered in that district comprising 2 from diphtheria and 2 from diarrhœa. Among the 138 deaths from all causes registered in Belfast are one from scarlatina, one from diphtheria, 18 from enteric fever, and 5 from diarrhœa. The 24 deaths in Limerick comprise 5 from measles and one from diarrhœa. Of the 5 deaths in Wexford 2 were from whooping-cough. Among the 7 deaths in Lurgan are one from measles and one from diarrhœa, and the 6 deaths in Sligo comprise one from enteric fever and one from diarrhœa.

In the Dublin Registration District the registered births amounted to 196—100 boys and 96 girls; and the registered deaths to 177—86 males and 91 females.

The deaths, which were 17 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·4 in every 1,000 of the population. Omitting the death of one person admitted to hospital from without the district, the rate was 26·3 per 1,000. During the forty-three weeks ending with Saturday, October 29, the death-rate averaged 26·6, and was equal to the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 20, being 7 under the number for the preceding week, and one below the average for the 43rd week of the last ten years. The 20 deaths comprise one from scarlet fever (scarlatina), 3 from influenza and its complications, one from whooping-cough, 3 from diphtheria, one from ill-defined fever, 3 from enteric fever, one from cholerine, and 4 from diarrhœa.

The number of cases of scarlatina admitted to hospital was 13, being 8 under the admissions for each of the two weeks preceding. Fourteen scarlatina cases were discharged, and 95 remained under treatment on Saturday, being one under the number in hospital on that day week. There were also 18 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital fell to 22. Twenty-four patients were discharged, 5 died, and 177 remained under treatment on Saturday, being 7 under the number in hospital at the close of the preceding week.

Eight cases of diphtheria were admitted to hospital, against 5 admissions in the preceding week. Three patients were discharged, 2 died, and 15 remained under treatment in hospital on Saturday.

Thirty-two deaths from diseases of the respiratory system were registered, being 5 over the average for the corresponding week of the last ten years, but 8 under the number for the previous week. They comprise 22 from bronchitis and 8 from pneumonia.

In the week ending Saturday, November 5, the mortality in thirty-three large English towns, including London (in which the rate was 16·1), was equal to an average annual death-rate of 17·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·9 per 1,000. In Glasgow the rate was 17·9, in Edinburgh it was 18·8 per 1·000.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 21·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·8 per 1,000, the rates varying from 0·0 in fourteen of the districts to 17·0 in Newtownards—the 4 deaths from all causes registered in that district comprising 3 from diarrhœa. Among the 153 deaths from all causes registered in Belfast are 2 from measles, 2 from whooping-cough, 2 from diphtheria, 17 from enteric fever, and 2 from diarrhœa. The 12 deaths in Limerick comprise 3 from measles.

In the Dublin Registration District the registered births amounted to 202—110 boys and 92 girls; and the registered deaths to 166—77 males and 89 females.

The deaths, which were 11 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·8 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 23·6 per 1,000. During the forty-four weeks ending with Saturday the death-rate averaged 26·6, and was equal to the mean rate in the corresponding period of the ten years 1888–1897.

Twenty-one deaths from zymotic diseases were registered, being one over the number for the preceding week, but 2 under the average for the 44th week of the last ten years. They comprise one from measles, 2 from scarlet fever (scarlatina), one from influenza, 3 from whooping-cough, 3 from diphtheria, 3 from enteric fever, and 6 from diarrhœa.

Fourteen cases of scarlatina were admitted to hospital, being one over the admissions for the preceding week. Fourteen scarlatina patients were discharged, one died, and 94 remained under treatment on Saturday, being one under the number in hospital at the close of the preceding week. There were also 18 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 20, being 2 under the admissions in the preceding week. Forty-one patients were discharged, one died, and 155 remained under treatment on Saturday, being 22 under the number in hospital on that day week.

The number of admissions of diphtheria fell to 2. Five patients were discharged, 2 died, and 10 remained under treatment in hospital on Saturday, being 5 under the number in hospital at the close of the preceding week.

Diseases of the respiratory system caused 35 deaths, being 2 in excess of the average for the corresponding week of the last ten years, and 3 over the number for the previous week. The 35 deaths consist of 27 from bronchitis and 8 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of October,* 1898.

Mean Height of Barometer, - - -	29·774 inches.
Maximal Height of Barometer (on 4th, 9 a.m.),	30·365 „
Minimal Height of Barometer (on 17th, 9 p.m.),	28·904 „
Mean Dry-bulb Temperature, - -	51·7°.
Mean Wet-bulb Temperature, -	50·0°.
Mean Dew-point Temperature, -	48·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·343 inch.
Mean Humidity, - - - -	89·3 per cent.
Highest Temperature in Shade (on 3rd), -	64·8°.
Lowest Temperature in Shade (on 12th), -	40·0°.
Lowest Temperature on Grass (Radiation) (on 20th), - - - - -	34·0°.
Mean Amount of Cloud, - - -	62·3 per cent.
Rainfall (on 19 days), - - -	3·579 inches.
Greatest Daily Rainfall (on 17th), - -	·808 inch.
General Directions of Wind, - - -	S.E., W., E.

Remarks.

October, 1898, was singularly mild—the mean temperature being more than 3° above the average. The first 12 days were generally fine and dry, the only rainfall occurring on the night of the 8th and morning of the 9th. On and after the 13th, however, rain fell in Dublin daily up to and including the 30th—that is, on 18 consecutive days.

In Dublin the arithmetical mean temperature (52·8°) was much above the average (49·7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 51·7°. In the thirty-three years ending with 1897, October was coldest in 1892 (M. T.=44·8°), and in 1896 (M. T.=45·0°). It was warmest in 1876 (M. T.=53·1°). The M. T. in 1897 was 52·3°.

The mean height of the barometer was 29·774 inches, or 0·066 inch below the corrected average value for October—namely, 29·840 inches. The mercury rose to 30·365 inches at 9 a.m. of the 4th, and fell to 28·904 inches at 9 p.m. of the 17th. The observed range of atmospheric pressure was, therefore, as much as 1·461 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 51·7°, or 7·0° below the value for September, 1898. The arithmetical mean of the maximal and minimal readings was 52·8°, compared with a twenty-five years' average of 49·7°. Using the formula, *Mean Temp.* = *Min.* + (*max.* − *min.* × ·485), the mean temperature was 52·7°, or 3·2° above the average mean temperature for October, calculated in the same way, in the twenty-five years, 1865–89, inclusive (49·5°). On the 3rd the thermometer in the screen rose to 64·8°—wind, E.; on the 12th the temperature fell to 40·0°—wind, calm. The minimum on the grass was 34·0° on the 20th. The thermometer did not sink to or below 32° in the screen, or even on the grass.

The rainfall was 3·579 inches, distributed over 19 days—the rainfall and the rainy days were decidedly above the average. The average rainfall for October in the twenty-five years, 1865–89, inclusive, was 3·106 inches, and the average number of rainy days was 17·6. In 1880 the rainfall in October was very large—7·358 inches on 15 days. In 1875, also, 7·049 inches fell on 26 days. On the other hand, in 1890, only ·639 inch fell on but 11 days; in 1884, only ·834 inch on but 14 days; and in 1868 only ·856 inch on 15 days.

Lightning was seen on the night of the 11th. High winds were noted on 10 days, and attained the force of a gale on two occasions—the 15th and 16th. The atmosphere was more or less foggy in Dublin on the 1st, 3rd, 4th, 12th, 20th, 21st, 28th, and 29th. A lunar halo appeared on the 26th.

Saturday, the 1st, was at first foggy and cloudy, afterwards dull with slight rain, and mild.

Very favourable weather prevailed almost to the close of the week ended Saturday, the 8th. During the earlier days of the period an anticyclone of large size and much staying power lay directly over the British Islands, where the weather was fine and quiet. On Tuesday this system began to move away towards N.E., while it increased somewhat in intensity, the barometer rising above 30·40 inches in its centre. The result was that freshening E. and S.E. winds sprang up in the English Channel and over England and Ireland generally, while the area of calms passed northwards to Scotland. On Thursday an area of low atmospheric pressure showed itself off the S.W. of Ireland and began at the same time to spread eastwards, still further steepening gradients for S.E. winds, and causing a gale from that point and rain in the S. and S.W. of Ireland. On Monday and Tuesday thick fogs were experienced in the Irish Sea and the sky subsequently remained densely clouded. A remarkable feature of the week's weather was the warmth felt in the North of Scotland by day and the great diurnal range of temperature in that locality. On Monday the thermometer rose to 73° at Wick, on Tuesday the range at the same station was from 71° to 40° (31° in a few hours). In Dublin the mean height of the barometer was 30·147 inches, pressure ranging from 30·365 inches at 9 a.m. of Tuesday (wind, calm) to 29·856 inches at 9 p.m. of Saturday (wind, S.E.). The corrected mean temperature was 57·9°. The mean dry-bulb reading at 9 a.m. and 9 p.m. was 56·7. On Monday the screened thermometers rose to 64·8°, on Tuesday they fell to 48·3°. E. to S.E. winds prevailed. Rain fell on Saturday night and Sunday morning (the 9th) to the amount of ·222 inch. The rainfall at the Botanic Gardens, Glasnevin, on Saturday night and Sunday morning amounted to ·540 inch.

In the week ended Saturday, the 15th, the weather, at first fine, although cold, finally became very broken, dull, stormy, and wet. At both the beginning and close the distribution of atmospheric pressure was cyclonic. In the interval an anticyclone of but slight intensity formed over the British Islands, causing calm, cold, foggy nights, but fine days. From Wednesday onward a large area of low pressure kept spreading eastward over the kingdom from the S.W. of Ireland, in which locality rain fell in torrents, the measurement at Roche's Point, Co. Cork, being 3·6 inches. On Sunday morning a V-shaped depression stretched southeastwards from Donegal to the mouth of the English Channel. The weather was fine and cool after heavy rain in Ireland, while rain fell during the day in many parts of Great Britain. A shallow depression formed over the Continent on Monday, lasting until Thursday. This system caused heavy rain on the Norfolk coast and thunder and lightning in some places on Tuesday night. On Thursday a large depression came in over Ireland, while calms and fogs or light E. winds prevailed in England. On Friday morning a small secondary depression was found near Cork, and it was in connection with it that rain fell so heavily in the S.W. of Ireland. Friday and Saturday were dull rainy days even in Dublin. The mean height of the barometer in this city was 29·796 inches, pressure ranging from 30·152 inches at 9 p.m. of Tuesday (wind, N.W.) to 29·147 inches at 9 p.m. of Saturday (wind, E. by S.).

The corrected mean temperature was 50·9°. The mean dry-bulb temperature was 49·8°. On Sunday the shade thermometers rose to 61·8°, on Wednesday they fell to 40·0°. The prevailing winds were first W., then E.S.E. Rain fell on the last three days to the amount of ·746 inch, ·440 inch being recorded on Saturday. Winter set in this week in Scandinavia. At 8 a.m. of Saturday the thermometer read 19° at Hernösand in Sweden.

The exceedingly broken, rainy weather, which set in towards the close of the previous week, continued during the greater part of the week ended Saturday, the 22nd. On Sunday, the 16th, a large and deep depression was central at the mouth of St. George's Channel, where the barometer was below 28·9 inches. An easterly gale blew with little intermission on the east coasts of both Great Britain and Ireland, while rain fell heavily in many places, and the sky wore a most gloomy aspect. By Monday morning the centre of the depression reached Cornwall and the mouth of the English Channel, the barometer reading 28·63 inches at St. Mary's, Scilly Islands, and 28·65 inches at Brest. The wind now backed to N.E. and N. in Ireland, blowing as strongly as before. On Tuesday morning two minima of pressure were found—over Anglesea and near London respectively—but the depression was beginning to fill up. Wet weather continued, but the storm-area passed northwards to Scotland and the north of Ireland. All this time cold, anticyclonic weather held in Scandinavia and to this fact the rains and gales of the period in the British Isles must in some measure be attributed. After Wednesday a succession of depressions passed northwards along the western coasts of Ireland and of Scotland. On Friday and Saturday a brisk rise of temperature occurred. In Dublin the mean height of the barometer was 29·351 inches, pressure ranging from 28·904 inches at 9 p.m. of Monday (wind, N.E.) to 29·792 inches at 9 p.m. of Saturday (wind, S.W.). The corrected mean temperature was 51·3°. The screened thermometers sank to 40·2° on Thursday and rose to 63·9° on Saturday. The mean dry-bulb reading at 9 a.m. and 9 p.m. was 50·3°. The rainfall was 1·536 inches on 7 days, ·808 inch falling on Monday. At first N.E., then S.W., winds prevailed.

Mild, but changeable and, in the neighbourhood of Dublin, dull, damp, and often rainy weather prevailed throughout the week ended Saturday, the 29th. The general distribution of atmospheric pressure was anticyclonic over France and Germany, cyclonic in the N.W. and N. of Europe. At first gradients were rather steep over the British Isles for S.W. to W. winds, and accordingly the wind blew strongly and in squalls from those points. Rain fell tolerably generally in the form of showers during the first few days, but the measurement was not large, except in the Hebrides where the rainfall up to Friday morning totted to 3·08 inches. At 8 a.m. of Wednesday the barometer read 30·33 inches at Lyons, but only 29·17 inches in the Shetlands. On Thursday a shallow secondary depression formed over Ireland and St. George's Channel. This led to a light easterly or south-easterly breeze and very dull, rainy weather in North Wales and on the east coast of Ireland. A brief spell of fine weather in Dublin on Saturday forenoon was followed by a return of clouds and east wind and a downpour of rain in the evening. In Dublin the mean height of the barometer was 29·829 inches, pressure ranging from 30·024 inches at 9 p.m. of Sunday (wind, W.S.W.) to 29·322 inches at 9 p.m. of Saturday (wind, N.W.). The corrected mean temperature was 52·2°. The mean dry-bulb temperature at 9 a.m. and 9 p.m. was 51·2°. The screened thermometers fell to 46·2° on Monday and Tuesday, and rose to 59·8° on Wednesday. The prevailing wind was W.S.W. Rain fell daily, the total measurement being ·694 inch, of which ·317 inch was measured on Saturday.

Rain fell heavily about midday on Sunday, the 30th. The 31st was cool, bright, and dry.

The rainfall in Dublin during the ten months ending October 31st amounted to 21·547 inches on 156 days, compared with 12·366 inches on 123 days during the same period in 1887 (the dry year), 22·052 inches on 165 days in 1896, 24·081 inches on 179 days in 1897, and a twenty-five years' average of 22·840 inches on 160·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in October amounted to 4·489 inches on 16 days. Of this quantity ·685 inch fell on the 17th, and ·680 on the 15th. From January 1st, 1898, up to October 31st, rain fell at Knockdolian on 140 days to the total amount of 24·177 inches. In 1893 the rainfall of the corresponding ten months was 17·801 inches on 133 days; in 1894, 32·221 inches on 154 days; in 1895, 26·270 inches on 131 days, in 1896, 27·837 inches on 137 days; and in 1897, 32·730 inches on 171 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall in October was 3·53 inches on 18 days, compared with ·710 inch on 14 days in 1893, 6·460 inches on 17 days in 1894, 2·650 inches on 14 days in 1895, 5·230 inches on 21 days in 1896, 2·280 inches on 11 days in 1897, and a thirteen years' average (1885–1897) of 3·303 inches on 15·8 days. On the 17th, ·85 inch fell. Since January 1, 1898, 21·72 inches of rain have fallen at this station on 154 days.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall in October was 4·385 inches on 17 days, compared with 3·175 inches on 13 days in October, 1897. Of this quantity ·820 inch was recorded on the 15th, and ·660 inch on the 8th. The highest temperature in the screen was 67·0° on the 4th, the lowest was 37·7° on the 20th. At this Second Order Station the rainfall from January 1 to October 31, inclusive, amounted to 26·476 inches on 139 days.

PERISCOPE.

COCAÏN HABIT AMONGST NEGROES.

W. Scheppegrell, M.D., writes (*Medical News*, New York, October 1st, 1898)—" A peculiar phase of the cocaïn habit which has developed in New Orleans, and in a number of other cities in the South, is the contraction of this habit by the negroes. The extent to which this has spread can be easily verified by druggists and in police circles. It is not used in the manner generally prescribed, but a few crystals of the drug are snuffed into the nostrils, not on account of its contractile effects on the nasal mucosa, as is usually the origin of this habit in the Caucasian, as the nasal passages of the negro are normally quite patulous, but on account of its exhilarating effects. The physical and mental wrecks which soon result from this vicious habit attest to its pernicious effects.

THE STATE PRISONER OF THE ILE DU DIABLE.

Dreyfus in his confinement draws up, towards the end of each month, a list of what he requires, and it is forwarded to the Maison Bailly, which now furnishes the goods. The list of articles requisitioned by the prisoner in the Ile du Diable for the ensuing month's consumption includes chocolate and Camembert cheese, an abundant supply of tobacco, toilet articles, such as soap, and medicinal supplies in the shape of a couple of bottles of Hunyadi János water.

SMITH'S PHYSICIANS' AND SURGEONS' VISITING LIST FOR 1899.

Messrs. Hazell, Watson & Viney, Ltd., of 52 Long Acre, London, W.C., have presented us with a copy of Smith's Physicians' and Surgeons' Visiting List for 1899. This is the oldest of the Medical Diaries, and is adapted for different numbers of patients. It is bound in different styles, and in every respect deserves its popularity.

INDEX

TO THE ONE HUNDRED AND SIXTH VOLUME.

Academy of Medicine in Ireland, Royal, 70, 168, 270, 366, 455, 533.
A charmed life, 182.
Acromegaly, Dr. W. J. Thompson on, 79.
Addison's disease, three cases of, Dr. Parsons on, 461.
Address to Royal Institute of Public Health, by Sir C. A. Cameron, 193.
Adeno-carcinoma of the mamma, Mr. Wheeler's case of, 460.
African, West, Medical Service, 94.
Alkaline lye, toxic effect of, 191.
Allbutt, Dr. T. Clifford, system of medicine, *Rev.*, 244.
Anatomy and Physiology, Section of, in the Royal Academy of Medicine in Ireland, 547.
Anatomy, recent works on, *Rev.*, 57.
Anderson, Dr. Izett, yellow fever in the West Indies, *Rev.*, 319.
Aneurysm, dissecting, Dr. J. B. Coleman on, 125, 542.
Antitoxin serum in tetanus, by Mr. R. G. Patteson, 385.
Apenta water, 384.
Aphasia in a left-handed woman, 314.
Apothecaries' Hall in Ireland, regulations of the, 362.
Archives of—Pediatrics, *Rev.*, 146; the Roentgen Ray, *Rev.*, 154.
Arrested menstruation, Dr. Wallace on, 531.
Arterial wounds, closing, by suture, 288.
Association française de chirurgie, 94.
Atkinson, Dr. T. Remell, Aids to Examination, *Rev.*, 428.

Baby feeding, *Rev.*, 146.
Baker, Dr. A. W. W., presidential address, 526.
Bannatyne, Dr. Gilbert A., rheumatoid arthritis, *Rev.*, 427.
Barium chloride in heart disease, 327.
Barton, Dr. John, unusual course of phrenic nerve, 548.
Bashore, Dr. Harvey B., outlines of rural hygiene, *Rev.*, 250.
Bastian, Dr. H. Charlton, aphasia and other speech defects, *Rev.*, 517.
Beevor, Dr. Charles E., diseases of the nervous system, *Rev.*, 523.
Belfast, Queen's College, 351.
Bennett, Dr. E. H., traumatic rupture of duodenum, 171.
Bewley, Dr. H. T., report on practice of medicine, 324, 429.
Bibliographical notices, 32, 133, 226, 315, 419, 505.
Biedermann, W., electro-physiology, *Rev.*, 251.
Bile pigment, new test for, 481.
Birmingham, Professor, exhibits, 548; muscular fibres of the œsophagus, 548; muscular fibres of the stomach, 549.
Black tongue, a case of, 190.
Blind, congenitally, as outlook men at sea, 132.
Bradshaw's dictionary of bathing places, *Rev.*, 250.
Brine baths, Nantwich, Sir Philip Smyly on, 6.
British Medical Service, 381.
British Pharmacopœia, the, *Rev.*, 64, 158.
Broncho-pneumonia in children, 31.
Buck, Dr. Albert H., a vest-pocket medical dictionary, *Rev.*, 258.
Burdett, Sir Henry, Burdett's hospitals and charities, 1898, *Rev.*, 155.
Burgess, Dr. J. J., cerebral abscess, 270.
Burroughs, Wellcome & Co., Messrs.—"tabloid" hypophosphites compound, 192; tabloids of zinc oxide, 478.

Cameron, Sir C. A., presidential address to Royal Institute of Public Health, 193.
Campbell, Mr. John, perforating gastric ulcer, 533.
Cancer of œsophagus, Dr. J. W. Moore's case of, 171.
Carbolic acid, lethal effect of, on an infant, 189.
Cardiac action, slow, Dr. Kinkead on, 4, 540.
Carless, Mr. Albert, manual of surgery, *Rev.*, 425.
Cerebral abscess, Dr. Burgess on, 270.
Cervical sympathetic, section of, in Graves's disease, 69.
Chilblains—to prevent, 95; ulcerated, 167.
Child, iliac perforation in a, 81.
Children—broncho-pneumonia in, 31; works on diseases of, *Rev.*, 144, 255; mortality of, in Ireland, by Mr. W. Langford Symes, 273.

Choksy, Khan Bahadur N. H., report on bubonic plague, *Rev.*, 162.

Cinchonism, prevention of, 435.

Clarkson, Mr. Arthur, Atlas of Histology, *Rev.*, 148.

Clinical—Report of the Rotunda Hospital, by Drs. Purefoy, Wilson, Jellett, and Lyle, 11, 97, 169, 366, 545; discussion, 367; records, 330, 451, 531.

Cocaïn habit among negroes, 568.

Cold, extreme, in tuberculosis, 81.

Coleman, Dr. James B., dissecting aneurysm, 125, 542.

Coles, Dr. Alfred C., the blood, *Rev.*, 151.

Colitis, membranous, Dr. Dawson on, 540.

Colon, anomalous positions of the, 464.

Colton, Buel P., physiology, experimental and descriptive, *Rev.*, 521.

Congenitally blind as outlook men at sea, 132.

Corfield, Dr. W. H., dwelling-houses, *Rev.*, 318.

Cork, Queen's College, 352.

Cotterell, Mr. Edward, The Pocket Gray, *Rev.*, 60.

Cystinuria, Dr. Walter G. Smith on, 77.

Dawson, Dr. W. R., membranous colitis, 540.

Delore, Dr. X., de la fonction du nouvel urètre, *Rev.*, 240.

Delusions and insanity, 383.

Dental education and examinations in Ireland, 364.

Derecq, Dr. Léon, la tuberculose infantile, *Rev.*, 257.

Dictionary of bathing places, by B. Bradshaw, *Rev.*, 250.

Digitalis, effects of, on heart, 326.

Diphtheria, preputial, 383.

Diplomas in State Medicine, Public Health, or Sanitary Science, 351, 360.

Diseases of children, works on, *Rev.*, 144, 255.

Dissecting aneurysm, Dr. James B. Coleman on, 125, 542.

Drury, Dr. H. C., remarks on typhoid fever, 115.

Dublin—climatology of, by Dr. J. W. Moore, 299; University of, regulations of the, 334.

Dubois Reymond's library, 191.

Duodenum, traumatic rupture of, 171.

Edinburgh Medical Journal, *Rev.*, 155.

Education and examinations in Ireland, medical, 332.

Électro-thérapie, Société française d', 287.

Enterectomy for intestinal infarct, Mr. T. E. Gordon on, 457.

Enteric fever—remarks on, by Dr. H. C. Drury, 115, 271; rash of influenza simulating, by Dr. Pelon, 165; laryngeal ulceration in, Dr. J. M. Finny on, 271; sero-diagnostic test for, Dr. McWeeney on, 273; recent clinical experiences in, by Dr. J. W. Moore, 496.

Epileptics, report of the Meath Home of Comfort for, *Rev.*, 156.

Eyre, Mr. John J., Dr. Mendini's hygienic guide to Rome, *Rev.*, 251.

Ferru-cocoa, 288.

Fever, typhoid—remarks on, by Dr. H. C. Drury, 115, 271; rash of influenza simulating, Dr. Pelon on, 165; laryngeal ulceration in, by Dr. Finny, 271; sero-diagnostic test for, Dr. McWeeney on, 273; recent clinical experiences in, by Dr. J. W. Moore, 496.

Finny, Dr. J. M.—pneumothorax, 76; laryngeal ulceration in typhoid fever, 271.

Foy, Dr. G. M., translation of Dr. Pelon's article on rash of influenza, 165.

Fracture of the—humerus, gunshot, Mr. M'Ardle on, 70; skull, Mr. Wheeler's case of, 173; patella, complete osseous union in, Dr. Knott's case, 178.

Fraser, Professor, embryological specimens, 548.

Funis only six and a half in. long, 464.

Gadd, Mr. H. Wippell, synopsis of the British Pharmacopœia, 1898, *Rev.*, 158, 322.

Galliard, Dr. L., la grippe, *Rev.*, 243.

Galway, Queen's College, 352.

Gersungy, Dr. Robert, doctors and patients, *Rev.*. 157.

Gibson, Dr. G. A., the Edinburgh Medical Journal, *Rev.*, 155.

Glenn, Dr. J. H., specimens, 168; cystoma ovarii, 545.

Gluzinski's new test for bile pigment, 431.

Gordon, Mr. T. E., enterectomy for intestinal infarct, 457.

Gore, Surgeon-General, Indian northwest frontier disturbances, 401.

Graves's disease treated by section of the cervical sympathetic, 69.

Gray, Dr. Henry, anatomy, *Rev.*, 57.

Gribble, Mr. J. D. B., outlines of medical jurisprudence for India, *Rev.*, 322.

Grimshaw, Dr. T. W., relations between Preventive Medicine and Vital Statistics, 387, 481.

Guaiacol in serous pleural effusion, 325.
Gunshot fracture of the humerus, Mr. M'Ardle on, 70.

Hæmoptysis, treatment of, 328.
Hæmorrhage in internal urethrotomy, Mr. Myles on. 538.
Hæmostatic, sodium sulphate as a, 328.
Hall, Dr. F. de Havilland, medical examination for life assurance, *Rev.*, 161.
Heart—rupture of, by the blow of a stick, 190; effects of prolonged use of digitalis on the, 326; barium chloride in disease of the, 327.
Hedley, Dr. W. S., Archives of the Roentgen Ray, *Rev.*, 154.
Hehir, Dr. Patrick, outlines of medical jurisprudence for India, *Rev.*, 322.
Herbal skin remedies, by Dr. H. S. Purdon, 27.
Herman, Dr. G. Ernest, diseases of women, *Rev.*, 52.
Hernia, operations for strangulated, Mr. M'Ardle on, 1, 112.
Hewlett, Dr. Richard T., manual of bacteriology, *Rev.*, 510.
Hirsch, William, genius and degeneration, *Rev.*, 32.
Hospital, Rotunda—Clinical Report of the, 11, 97, 169, 366, 545; discussion, 367.
Humeri, pathological, Dr. Knott on, 464.
Humerus, gunshot fracture of the, Mr. M'Ardle on, 70.
Hypophosphites compound, "tabloid," 192.

Icterus, urobilin, Dr. Parsons on, 548.
Iliac perforation in a child, 81.
Indian—Medical Service, 381; North-West frontier disturbances, Surgeon-General Gore on, 401.
Infant—lethal effect of carbolic acid on an, 189; examining the larynx in an, 189.
Infantile diseases, recent works on, *Rev.*, 255.
Influenza, rash of, simulating typhoid, by Dr. Pelon, 165.
Insanity, delusions and, 388.
Internal urethrotomy, hæmorrhage in, Mr. Myles on, 538.
Interventricular septum, diagnosis of the position of the, 326.
Intestinal obstruction from malignant disease—Mr. John Lentaigne on, 455; infarct, enterectomy for, by Mr. T. E. Gordon, 457.
Intra-uterine stem in arrested menstruation, Dr. Wallace on, 531.
Ireland, Dr. W. W., the mental affections of children, *Rev.*, 229.
Ireland—Royal Academy of Medicine in. 70, 168, 270, 366, 455, 538; Royal University of, *Rev*, 240; regulations of the Royal University of, 341; mortality of children in, by Mr. W. Langford Symes, 273; its capital and scenery, by Dr. J. W. Moore, 299; medical education and examination in, 332; Apothecaries' Hall in, 362.

Jayne, Dr. Horace, mammalian anatomy, *Rev.*, 62.
Jellett, Dr. Henry—Clinical Report of the Rotunda Hospital, 11, 97, 169; specimens, 169.
Journal of the Scottish Meteorological Society, *Rev.*, 158.

Kelly, Dr. Howard, operative gynæcology, *Rev.*, 505.
Kennan, Dr. R. H., "relapse" in scarlatina. 493.
Kidd, Dr. F. W., vaginal hysterectomy, 545.
Kidney, traumatic rupture of liver and, Mr. Wheeler's case of, 174.
Kinematograph in medicine, 532.
Kinkead, Professor R. J.—slow cardiac action, 4, 540; our senses and how they serve us, 259, 437.
Kirkpatrick, Dr. T. Percy C., pulmonary phthisis, 216.
Knott, Dr. John—complete osseous union in transverse fracture of the patella. 178; pathological humeri, 464.
Koplik's sign of measles, 365.

Landouzy, Dr. L., les sérothérapies, *Rev.*, 226.
Laryngeal ulceration in advanced typhoid fever, Dr. Finny on, 271.
Larynx, method of examining, in an infant, 189.
Left-handed woman, aphasia in a, 314.
Lentaigne, Mr. John, intestinal obstruction from malignant disease, 455.
Lethal effect of carbolic acid on an infant, 189.
Levetus, A. S., Gersungy's doctors and patients, *Rev.*, 157.
Lewers, Dr. Arthur H. N., reclamation, 96.
Life, a charmed, 182.
Liver and kidney, traumatic rupture of, Mr. Wheeler's case of, 174.
Lung, re-expansion of the, 324.
Lye, alkaline, toxic effect of, 191.
Lyle, Dr. R. P. R., Clinical Report of the Rotunda Hospital, 11, 97, 169.

M'Ardle, Mr. J. S.—operation for strangulated hernia, 1, 112; gunshot fracture of the humerus, 70.

M'Weeney, Dr. E. —sero-diagnostic test for typhoid fever, 278; growth of typhoid bacilli in broth, 464.
Mamma, adeno-carcinoma of the, Mr. Wheeler's case of, 460.
Manders, Dr. Horace, the ferment treatment of cancer and tuberculosis, *Rev.*, 522.
Mann, Dr. J. Dixon, forensic medicine and toxicology, *Rev.*, 424.
Manson, Dr. Patrick, tropical diseases, *Rev.*, 47.
Martindale, Mr. W., the Extra Pharmacopœia, *Rev.*, 158.

Measles, Koplik's sign of, 365.
Meath Home of Comfort for Epileptics, report of the, *Rev.*, 156.
Medical—Miscellany. 70, 165, 259, 330, 437, 526; Service, West African, 94; education and examinations in Ireland, 332; services, British and Indian, 381.
Medicine—Royal Academy of, in Ireland, 70, 168, 270, 366, 455, 533; Section of, in the Royal Academy of Medicine in Ireland, 76, 270, 540; report on practice of, by Dr. H. T. Bewley, 324, 429; chest, adventures of a, 530.
Medico-statistical sketch of the North-West frontier disturbances, by Surgeon-General Gore, 401.
Membranous colitis, Dr. Dawson on, 540
Mendini's hygienic guide to Rome, *Rev.*, 251.
Menstruation, arrested, Dr. Wallace's case of, 531.
Mental diseases, Diploma in, 351.
Methyl salicylate in articular rheumatism, 430.
Merck, E., report on the year 1897, *Rev.*, 244.
Meteorological—notes, 88, 184, 282, 376 471, 563; Society, Journal of the Scottish, *Rev.*, 153.
Montgomery, Dr. R. J., exhibits, 547.
Moore, Dr. J. W.—sanitary and meteorological notes, 82, 179, 276, 370, 465, 550; cancer of œsophagus, 171; Ireland, its capital and scenery, 299; recent clinical experiences of septicæmia and enteric fever, 496.
Morris, Mr. Malcolm, ringworm, *Rev.*, 239.
Mortality of children in Ireland, Mr. W. Langford Symes, 273.
Moullin, Dr. C. Mansell, inflammation of the bladder and urinary fever, *Rev.*, 257.
Myles, Mr. Thomas, hæmorrhage in internal urethrotomy, 538.

Nantwich brine baths, Sir Philip Smyly on, 6.
Nasal disfigurement, plastic operation for, Dr. Wallace on, 451.
Negro, physical degeneration of the, 382.
Negroes, cocain habit among, 568.
Nephropexy without suturing, 95.
New preparations and scientific inventions, 192, 288, 478.
New Sydenham Society's publications, *Rev*, 148.
New York, report of the Presbyterian Hospital in the City of, *Rev.*, 249.
Nostril, superfluous tooth in the floor of the, 269.

Obstetrics, Section of, in the Royal Academy of Medicine in Ireland, 168, 366, 544.
Obstruction, intestinal, from malignant disease, Mr. Lentaigne on, 455.
O'Carroll, Dr. Joseph, duties of the community with regard to tuberculosis, 289.
Œsophagus—cancer of, Dr. J. W. Moore's case of, 171; muscular fibres of, Dr. Birmingham on, 548.
Old Irish "herbal" skin remedies, by Dr. H. S. Purdon, 27.
Operations for strangulated hernia, by Mr. M'Ardle, 1, 97.
Original communications, 1, 97, 193, 289, 385, 481.
Ovarian cyst, Dr. Alfred Smith on, 544.

Parker, Dr. W. H., Wiedersheim's comparative anatomy of vertebrates, *Rev.*, 61.
Parsons, Dr. Alfred, three cases of Addison's disease, 461; pericarditis, 543; urobilin icterus, 543.
Pathology, Section of, in the Royal Academy of Medicine in Ireland, 171, 460.
Patella, complete osseous union in transverse fracture of, Dr. Knott, 178.
Patteson, Mr. R. Glasgow, treatment of tetanus by antitoxin serum, 385.
Peddie, Dr. William, a manual of physics, *Rev.*, 427.
Pediatrics—*Rev.*, 145; Archives of, *Rev.*, 146.
Pelon, Dr., rash of influenza simulating typhoid, 165.
Perforating gastric ulcer, Mr. John Campbell's case of, 533.
Pericarditis, Dr. Parsons on, 543.
Periscope, 93, 190, 287, 381, 477 568.
Petit, Dr. Georges, la tuberculose infantile, *Rev.*, 257.
Pharmacopœia—the British, *Rev.*, 64; the Extra, *Rev.*, 158.

Phrenic nerve, Dr. Birmingham on the, 548.
Phthisis, pulmonary, Dr. T. P. Kirkpatrick on, 216.
Physicians and Surgeons, Royal Colleges of, regulations of the, 352.
Pick, Mr. T. Pickering, Gray's anatomy, *Rev.*, 57.
Plague, report on bubonic, *Rev.*, 162.
Pneumogastric, stretching the, 436.
Pneumonia, treatment of, 331.
Pneumothorax, Dr. Finny on, 76.
Preparations, new, 192. 288, 478.
Preputial diphtheria, 436.
Presidential address, by Dr. A. W. W. Baker, 526.
Prevention of cinchonism, 435.
Preventive Medicine and Vital Statistics, relations between, by Dr. Grimshaw, 387, 481.
Prolific race, a, 191.
Public Health—Royal Institute of, 193; diplomas, 350, 360.
Purdon, Dr. H. S., old Irish "herbal" skin remedies, 27.
Pulmonary—affections, warm baths in, 69; phthisis, Dr. T. P. Kirkpatrick on, 216.
Purefoy, Dr. R. Dancer—Clinical Report of the Rotunda Hospital, 11, 97, 169, 366, 545; specimens, 168, 366.
Putrid abscess of broad ligament, 93.

Queen's Colleges, regulations of the, 351.

Radioscopy of the stomach and intestines, 432.
Reclamation—by Dr. Lewers, 96; by Dr. J. Clarence Webster, 479.
Records, clinical, 330, 451.
"Relapse" in scarlatina, Dr. R. H. Kennan on, 493.
Relations between Preventive Medicine and Vital Statistics, Dr. T. W. Grimshaw on, 387, 481.
Report, Clinical, of the Rotunda Hospital, 11, 97, 169, 366, 545; discussion, 367.
Reports, special, on practice of medicine, by Dr. H. T. Bewley, 324, 429.
Reviews and bibliographical notices, 52, 133, 226, 315, 419, 505.
Rheumatism, articular, methyl salicylate in, 430.
Rheumatoid arthritis, 429.
Rogers, Dr. John, manual of operative surgery, *Rev.*, 142.
Rose, Mr. William, manual of surgery, *Rev.*, 425.
Rotunda Hospital, Clinical Report of the, 11, 97, 169, 366; discussion, 367.
Rowland, Mr. Sydney, Archives of the Roentgen Ray, *Rev.*, 154.
Royal—Colleges of Physicians and Surgeons, regulations of the, 352; Academy of Medicine in Ireland, 70, 168, 270, 366, 455, 538; Institute of Public Health, addresses to, 193; University of Ireland, *Rev.*, 240; University of Ireland, regulations of the, 341.
Rupture of—liver and kidney, 174; heart from blow of stick, 190.
Ruptured middle meningeal artery, 382.

Salophen, uses of, 433.
Sanitary and meteorological notes, 82, 179, 276, 370. 465, 550.
Sanitary Science diplomas, 350, 360.
Sarcoma of the sphenoid, Mr. Wheeler's case of, 176.
Scarlatina, "Relapse" in, Dr. Kennan on, 493.
Schenk, Dr. Leopold, the determination of sex, *Rev.*, 45.
Scientific inventions, 192, 288, 478.
Scottish Meteorological Society, Journal of the, *Rev.*, 158.
Senses, our, and how they serve us, Professor Kinkead on, 259, 437.
Septicæmia, recent clinical experiences in, Dr. J. W. Moore on, 496.
Sero-diagnostic test for typhoid fever, Dr. M'Weeney on, 273.
Skin remedies, old Irish "herbal," by Dr. H. S. Purdon, 27.
Skull, fracture of, Mr. Wheeler's case of, 178.
Slow cardiac action, Dr. Kinkead on, 4, 540.
Smith, Dr. Alfred, ovarian cyst, 544.
Smith, Mr. J. Greig, abdominal surgery, *Rev.*, 514.
Smith, Dr. Robert W., treatise on neuroma, *Rev.*, 148.
Smith, Dr. Walter G., case of cystinuria, 77.
Smith's Visiting List for 1899, 568.
Smyly, Sir Philip, Nantwich brine baths, 6.
Smyly, Dr. W. J., specimens, 168, 366.
Société française de l'Électro-thérapie, 287.
Sodium sulphate as a hæmostatic, 328.
Special report on practice of medicine, by Dr. H. T. Bewley, 324, 429.
Spencer, Dr. Walter G., outlines of practical surgery, *Rev.*, 140.
Spleen, is new splenic tissue formed after removal of the, 385.
State Medicine—Section of, in the Royal Academy of Medicine in Ireland, 273; diplomas, 350, 360.

State prisoner of the Ile du Diable, 568.
Stedman, Dr. Thomas L., Twentieth Century Practice, *Rev.*, 315, 419.
Stimson, Dr. Lewis A., manual of operative surgery, *Rev.*, 142.
Stokes, William, his life and work, *Rev.*, 133.
Stomach, muscular fibres of the, Dr. Birmingham on, 549.
Strangulated hernia, operations for, Mr. M'Ardle on, 1, 97.
Surgeons, Royal Colleges of Physicians and, regulations of the, 352.
Surgery, Section of, in the Royal Academy of Medicine in Ireland, 70, 455, 533.
Suture, closing arterial wounds by, 288.
Swain, Dr. James, Greig Smith's abdominal surgery, *Rev.*, 514.
Sympathetic, cervical, section of, in Graves's disease, 69.
Symphysis pubis, spontaneous rupture of, during labour, 381.

Tabloids of—hypophosphites, compound, 192; zinc oxide, 478.
Tannalbin in children's diseases, 434.
Taylor, Dr. Frederick, manual of practice of medicine, *Rev.*, 524.
Tetanus, treatment of, by antitoxin serum, by Mr. R. G. Patteson, 365.
Testicle, undescended, Dr. James R. Wallace's case of, 330.
Thayer, Dr. William Sydney, lectures on the malarial fevers, *Rev.*, 320.
Thiry, Dr. Charles, de la paralysie générale dans le jeune âge, *Rev.*, 144.
Thomson, Dr. John, clinical examination and treatment of sick children, *Rev.*, 255.
Thompson, Dr. W. J., acromegaly, 79.
Tobin, Mr. R., surgical treatment of tuberculosis of hip, 72; a synopsis of surgery, *Rev.*, 516.
Tongue, case of black, 190.
Tooth, superfluous, in the floor of the nostril, 269.
Transactions—of the American Orthopædic Association, *Rev.*, 145; Pediatric Society, *Rev.*, 145.
Tuberculose infantile, la, *Rev.*, 257.
Tuberculosis—extreme cold in the treatment of, 81; Dr. O'Carroll on, 239.
Tuberculous disease of the hip, Mr. Tobin on, 72.
Turner, Dr. Dawson, manual of practical medical electricity, *Rev.*, 157.
Tweedy, Mr. E. Hastings, specimens, 366.
Twentieth Century Practice, *Rev.*, 315, 419.
Typhoid fever—remarks on, by Dr. H. C. Drury, 115, 271; rash of influenza simulating, Dr. Pelon on, 165; laryngeal ulceration in, by Dr. Finny, 271; sero-diagnostic test for, Dr. McWeeney on, 273, 464.

Ulcer, perforating gastric, Mr. John Campbell on, 533.
Ulcerated chilblains, 167.
University of—Ireland, Royal, *Rev.*, 240; regulations of the, 341; Dublin, regulations of the, 334.
Urethrotomy, hæmorrhage in internal, Mr. Myles on, 538.
Urobilin icterus, Dr. Parsons on, 543.

Valuable gift, 191.
Visiting List for 1899, Smith's, 568.
Vital Statistics, 82, 179, 276, 371, 465, 550; relations between Preventive Medicine and, Dr. Grimshaw on, 387, 481.

Waldstein, Dr. Louis, the subconscious self, *Rev.*, 164.
Wallace, Dr. James R.—putrid abscess of broad ligament, 92; case of undescended testicle, 330; plastic operation on the nose, 451; intra-uterine stem in arrested menstruation, 531.
Waring, Mr. H. J., manual of operative surgery, *Rev.*, 141.
Warm baths in pulmonary affections, 69.
Weber, Dr. Hermann, and Dr. F. Parkes, mineral waters and health resorts of Europe, *Rev.*, 159.
Webster, Dr. J. Clarence—diseases of women, *Rev.*, 253; reclamation by, 479.
Welby, Frances A., Biedermann's electrophysiology, *Rev.*, 251.
West African Medical Service, 94.
Westcott, Mr. Wynn, the Extra Pharmacopœia, *Rev.*, 158.
Wheeler, Dr. W. I. de Courcy—bones removed in fracture of skull, 173; traumatic rupture of liver and kidney, 174; sarcoma of sphenoid, 176; adenocarcinoma of the mamma, 460.
Wiedersheim, Dr. Robert, comparative anatomy of vertebrates, *Rev.*, 61.
Wilson, Dr. T. Henry, Clinical Report of the Rotunda Hospital, 11, 97, 169.
Wishart, Mr. John, the botanist's vade-mecum, *Rev.*, 249.
Works on—anatomy, *Rev.*, 57; surgery, *Rev.*, 140, 141, 142; diseases of children, *Rev.*, 144, 255.
Wounds, closing arterial, by suture, 288.

Zinc oxide, tabloids of, 478.

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